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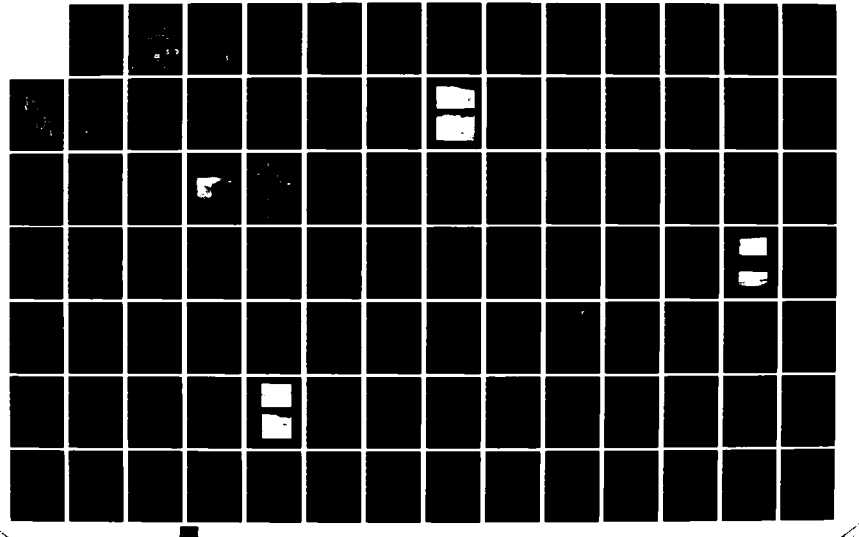

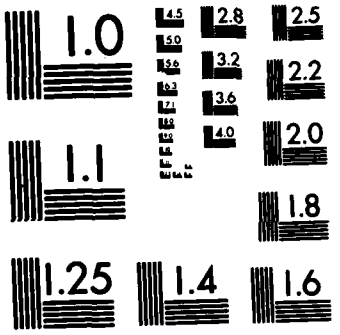

An Interpretive History of Coyote Dam Mendocino County, California

US Army Corps of Engineers
San Francisco District

AN INTERPRETIVE HISTORY

OF

COYOTE DAM

MENDOCINO COUNTY, CALIFORNIA

Prepared under Contract No. DACW07-79-E-0056

U.S. Army Corps of Engineers

San Francisco District

by

Victoria D. Kaplan

February 1979

Edited by

Richard N. Lerner

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HISTORIC INTERPRETIVE PLATES

REPORT PARAMETERS AND ACKNOWLEDGMENTS

The following Interpretive History of Coyote Dam was prepared in fulfillment of Contract No. DACW07-79-E-0056 for the United States Army Corps of Engineers, San Francisco District, California. The Coyote Valley Project, which resulted in the formation of the present Coyote Dam-Lake Mendocino, was the first multi-purpose dam project undertaken by the San Francisco District of the U.S. Army Corps of Engineers. Its purpose was multi-faceted: to provide flood control, water conservation and recreation for the people of the Russian River Basin.

This Interpretive History reviews the background of the project and focuses on the information required by the contract pertaining to why and how the project was needed and constructed, changes which have taken place since construction, and the facilities and operations currently available (see Appendix E, "Scope of Service", History of Coyote Dam-Lake Mendocino Project, San Francisco District, U.S. Army Corps of Engineers). This report was prepared specifically for use in interpretive programming at the proposed Interpretive-Cultural Center to be built at Lake Mendocino and is, therefore, selective in its subject matter, stressing information geared to prospective visitor interests. Since this particular work is limited to an examination of the Corps' project itself, the history of the project area, i.e. Coyote Valley, has been largely ignored. However, a complete study of both Native-American and Anglo uses of Coyote Valley, as well as reports of archaeological investigations of the area, are available on file at the San Francisco District

U.S. Army Corps of Engineers, 211 Main Street, San Francisco, California, and at the Ethnographic Laboratory, Sonoma State College, Rohnert Park, California. Specific works and chapters are referenced in the following text and these should be pursued by those readers who desire knowledge of the broader context within which the Coyote Valley Project occurred.

A partial list of relevant reference works follows:

Anuskiewicz, Rick
1974 An Archaeological Survey of Lake Mendocino. U.S. Army Corps of Engineers, San Francisco District.

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1908 The Ethnogeography of the Pomo and Neighboring Indians. Berkeley University of California Publications in American Archaeology and Ethnology, 6(1).

Cox, Jerry L, Victoria D. Kaplan, Scott M. Patterson and Steven Stoddard
1977 The Effects of Freshwater Immersion on Cultural Resources of the Coyote Dam-Lake Mendocino Project Area, Ukiah, California. U.S. Army Corps of Engineers, San Francisco District.

Fenenga, Franklin
1948 Preliminary Appraisal of the Archaeological Resources of Coyote Valley Reservoir, Mendocino County, California. Manuscript on file with River Basin Survey, Washington, D.C., Smithsonian Institution.

Frederickson, David A. and Thomas M. Origer
1977 The Archaeology of the Lake Mendocino Project Area, Mendocino County, California: A Report of the Lake Mendocino Cultural Resource Study. U.S. Army Corps of Engineers, San Francisco District.

Hardson, John W.
n.d. Unpublished manuscripts. Lake Mendocino Cultural Resource Study Archive. Ethnographic Laboratory, Department of Anthropology, Sonoma State College, Rohnert Park, California.

Lake Mendocino Cultural Resources Study Archive
1976 Ethnographic Laboratory, Sonoma State College, Rohnert Park, California.

Peri, David W. and Scott M. Patterson (eds)
1977 They Came To Shodakai: A History of a Valley Known as Coyote, Mendocino County, California. U.S. Army Corps of Engineers, San Francisco District.

Peri, D. W., S. M. Patterson, V. D. Kaplan, and J. L. Cox
1977 Recommendations for the Management of Cultural Resources at the Coyote Dam-Lake Mendocino Project Area. U.S. Army Corps of Engineers, San Francisco District.

Treganza, Adan E.
1958 Archaeological Excavations in The Coyote Valley Reservoir Area, Mendocino County, California. Report on a joint project between U. S. National Park Service and the University of California, Berkeley, California.

The time constraints imposed by the contract did not permit the proper identification, location and communication with U.S. Army Corps personnel, many now retired, who were involved in the design of the dam. It is suggested that this deficiency be addressed during the development of interpretative programming.

Sincere acknowledgments are due Dr. Richard Lerner, Environmental Branch, San Francisco District, U.S. Army Corps of Engineers, and David W. Peri, Assistant Professor of Anthropology, Sonoma State College, Rohnert Park, California for their guidance and support. Special thanks to Florence Higginson, Administrative Clerk, and Noel Stoughton, Supervisory Park Ranger, and the Coyote Dam-Lake Mendocino Project Office, for their generous donations of time and information.

PREFACE

> The Yankees are a wonderful people.
> If they emigrated to hell itself,
> they would somehow manage to change
> the climate. (Mariano Vallejo in Watkins, T.H. 1971: 139)

California is indeed a land created by her settlers who bent and shaped the environment to suit their dreams. From the first miners of the Gold Rush to the present megapolis of Southern California, communities of people in California have consistently situated themselves where they pleased, regardless of the qualities of the surrounding natural environment. The locations of minerals and valuable land, often far from sources of water, and the irregularity of the water supplies themselves due to California's seasonal rainfall, created the early necessity of moving water.

As the easily extracted gold of river and stream beds played out, miners turned to the equally rich but more buried deposits in the canyons and foothills. To obtain the new gold profitably, a low-cost process of removing the overlying soil and gravel was needed. Such a procedure, called hydraulic mining, was developed in 1852. It involved shooting water out of hoses at high pressure over the area to be mined in order to work gold-laden gravels away from the hills. Periodically the flow was shut off and the gold removed from collection ditches dug into the bedrock.

The key to the process was large amounts of water which were often located far from the deposits. It became necessary

to bring the water to the gold and so an extensive water system was built consisting of large dams and miles of canals and flumes.

> ...by the end of the 1870's, there were more than 400 hydraulic mining companies scattered through the Sierra Nevada foothills, and they consumed more than 72 million gallons of water every day. One company alone built more than 700 miles of flumes and ditches for the delivery and discharge of water. (Watkins, T. H. 1971: 140)

But while hydraulic mining produced much gold, it devastated the land. Hillsides and canyons were stripped of topsoil which collected with other tailings in river and stream beds. Winter rainstorms washed the debris out of the mountain streams and onto the valley floors.

> It is estimated that between 1852 and 1909 some one and one-half billion cubic yards of earth, rocks and sand were washed into the streams from the Sierra to the sea. (Hagwood, Joseph J. 1976: 7)

As a result, the level of river and stream beds rose causing an elevated danger of flooding. Farmers, angered by the continual loss of crops and farm land to increasing floods, protested to the government. Their concerns were finally recognized in 1884 with the Sawyer Decision which prohibited the dumping of mining debris in water courses tributary to navigable streams and which effectively curtailed the hydraulic mining industry.

The events surrounding the growth of hydraulic mining created two legislative acts which have great importance for the subsequent histor of wat- resource development in

California. The first stemmed from the efforts of miners to establish programs of river reclamation in an attempt to rehabilitate the mining industry. In 1888, a bill was passed authorizing the U.S. Army Corps of Engineers to study the problems created by hydraulic mining and design a plan to allow both mining and river redemption. The Corps of Engineers submitted a plan which became the basis of a bill authorized by Congressman Anthony Caminetti of Amador County. The Caminetti Act was signed into law in 1893 and signaled the start of the Corps of Engineers' involvement with flood control in California. (For more information on U.S. Army Corps of Engineers history in California, see Hagwood, Joseph J. 1976 and Ramiller, Neil 1978.)

The second act involved a change in the understanding of "riparian rights". Mining requirements for water conflicted with established precedents for water rights which maintained that water directed from a stream for non-domestic use must be returned to its source undiminished. California changed these rules and allowed for the diversion of water for industry without requiring its return to its origin. The development of the subsequent concept of "appropriation and beneficial use" not only aided mining, but later formed the basis of laws such as the Wright Act of 1887 that authorized the formation and bonding of irrigation districts.

The Corps' involvement in California's flood control and the doctrine of "appropriation and beneficial use" both played significant roles in the history of the Coyote Valley Project.

The 1930's and 40's were decades of engineering triumph and romance. Great dams were built across the United States and,

> ...it was a time when such projects as Boulder Dam, Grand Coulee Dam, and the Tennessee Valley Authority were considered celebrations of man's ingenuity, of his ability to take hold of his environment and shape it to his needs.
> (Watkins, T. H. 1971:154)

In California, the long distance transportation of water to urban areas as from Los Angeles' Owens Valley and San Francisco's O'Shaughnessy Dam in Hetch Hetchy Valley had proved to be successful ventures. The mushrooming thirsty populations of both Southern California and the Bay Area began to cast their collective eye toward Northern California's flood-prone rivers which "wasted" their overflows into the sea. In such circumstances, plans for much needed flood control of California's northern waterways were directed toward the construction of dams which could also be used to store water rather than toward techniques of flood plain management. The flood conditions of the Russian River watershed (see Plate 1) came to be studied within such a context, and in order to address the additional needs of the Russian River basin for more water for irrigation, domestic, industrial and recreational uses, the Coyote Valley Project was conceived.

LOCATION
of
RUSSIAN RIVER
WATERSHED

CALIFORNIA

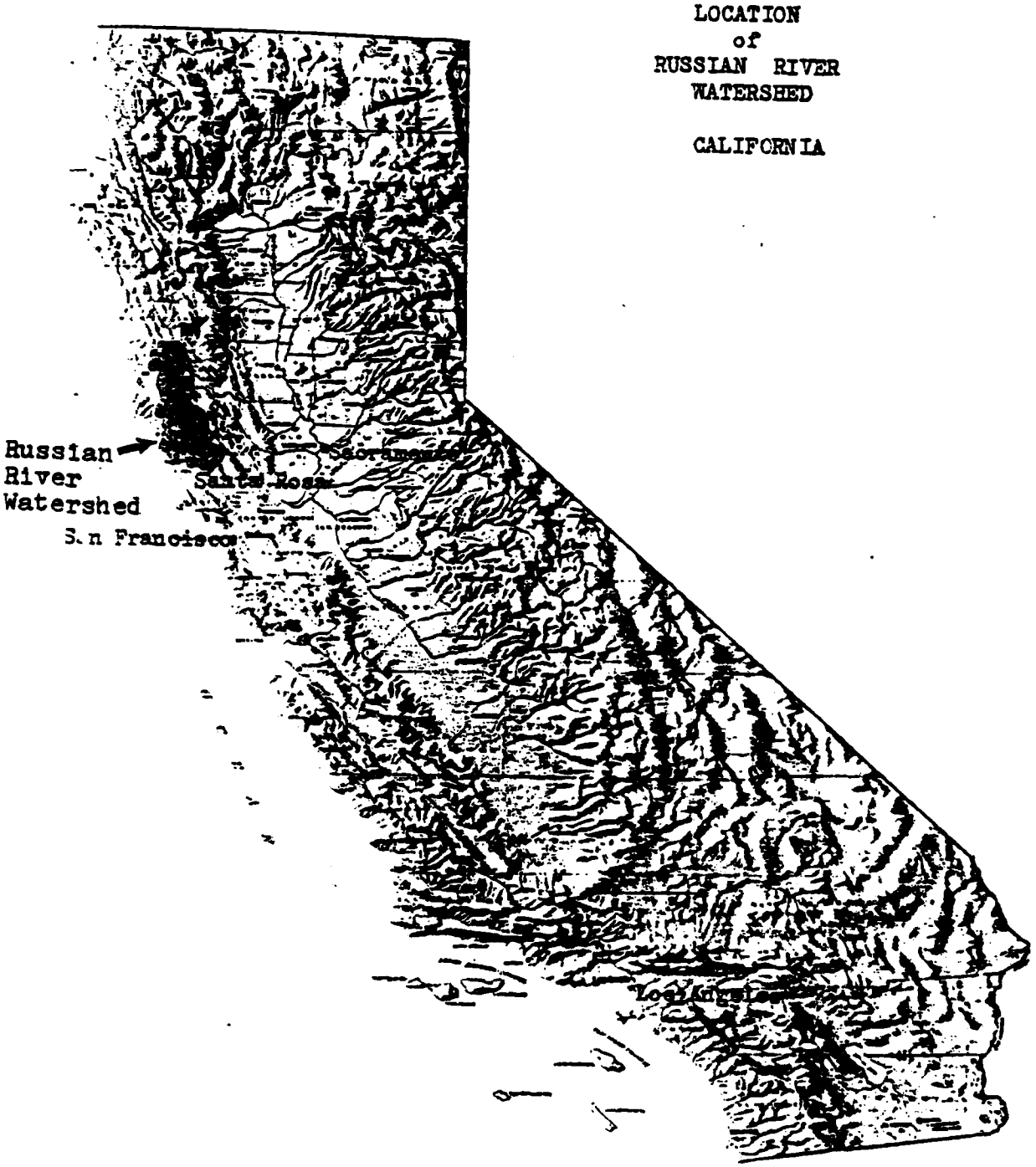


PLATE I

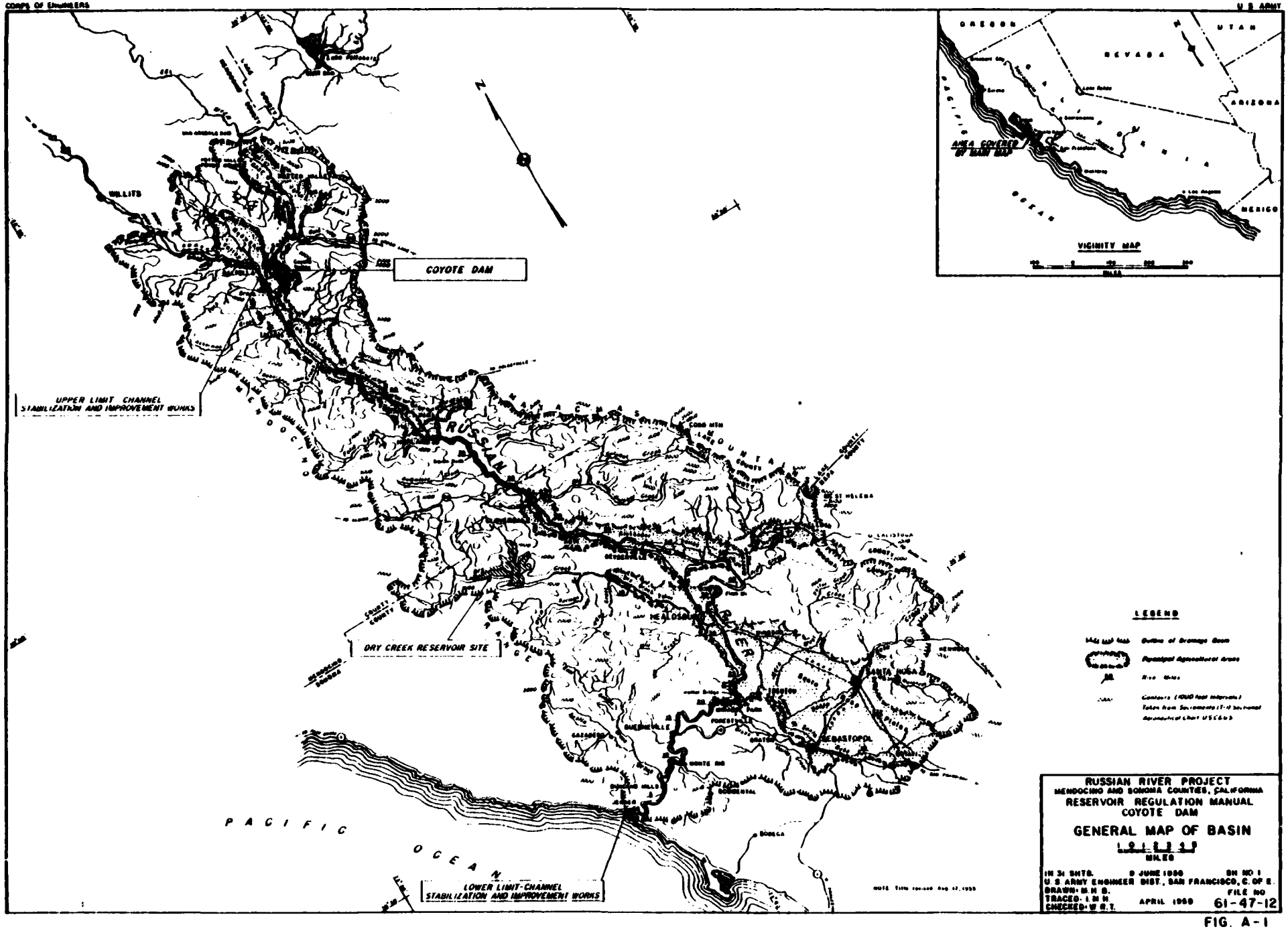


FIG. A-1

Plate 2

CHAPTER ONE

AN OVERVIEW OF THE RUSSIAN RIVER: ITS CHARACTER AND USES

"Too much water in the winter and not enough in the summer"

The Pomo Indians simply called it "the river". The 1821 diary of the Spanish Padre Blas Ordaz referred to it as the San Ygnacio. Its present name stems from the establishment of a Russian colony that flourished at Fort Ross on the coast from 1812 to 1841. Ivan A. Kuskof, a Russian, landed at Bodega Bay in 1811 to examine the territory for a suitable site on which to build a settlement for agriculture, fur hunting and trading to supply other Russian colonies in Alaska. Kuskof explored the inland agricultural valleys and named the stream that irrigated them, Slavianka, meaning Slav or Russian. The name remained although the Russian colonists departed. A Spanish version of it appeared in an 1843 petition for the Bodega land grant mentioning "la boca del Rio Ruso", the mouth of the Russian River.

Drainage Basin

The Russian River flows in a southwesterly direction through broad pastured valleys and scenic mountain gorges from Redwood Valley, north of Ukiah, to the Pacific Ocean at Jenner, 110 miles away. (See Plate 2) The drainage basin, about 80 miles long and 10 to 30 miles wide, lies between adjoining ridges of the Coast Range Mountains and is roughly parallel to the coast line. The basin is comprised of three segments, the upper and middle Russian River, which trend southeasterly, and a lower, westerly trending reach which cuts transversely

across the Coast Ranges. This configuration has not always existed and at one time all the territory lying west of the eastern boundary of Mendocino County was a peneplain surface which drained directly westward into the ocean. Then, at the beginning of Quaternary time, the region, as a whole, was subjected to localized folding and uplift. The main deformation, which created the major valleys, was accompanied by small scale folding and faulting. A long straight valley was formed parallel to the general direction of the Coast Range. The upper part of this valley which now encompasses Redwood, Ukiah and Hopland Valleys was the result of a syncline, a v-shaped fold, and the lower part, in what is now the gorge of the Russian River, is a fault line valley, a valley produced by erosion following the line of a fault. The original large valley from north of Calpella to south of Hopland was further modified by the rising and sinking of small parts, and the partial filling of sections by deposits of alluvial fans from tributary streams such as the East Fork of the Russian River. Most major tributary streams run west into the main valley with the exception of Dry Creek which runs east to join the river.

The river drains an area of 1,485 square miles. Approximately 2/3 of the area is in Sonoma County, 1/3 in Mendocino County and several small areas, less than 1% of the total, are in Lake County. Level valley areas make up about 15 percent of the land at elevations between 1,000 and 3,000 feet above sea level.

River Course

The main fork of the Russian River heads about 16 miles north of the City of Ukiah. It meets Forsythe Creek and its sub-tributary Mill Creek coming from the mountains to the west. They join the East Fork, emanating from Potter Valley, at a point aptly called the Forks approximately 2.5 miles north of the City of Ukiah. Since 1908, the East Fork has carried water diverted from the Eel River Basin through a transmountain tunnel to a Pacific Gas and Electric Company power plant in Potter Valley. The augmented flow continues south 9 miles from the Forks through the Ukiah valley. Only short streams contribute to this stretch.

The river then enters a steep, winding gorge and emerges after 10 miles into the Hopland valley near the town of Hopland. After leaving Hopland, the river continues in a southerly direction through 25 miles of rough canyons passing Cloverdale to Alexander Valley. Just north of Cloverdale, Sulphur Creek with 81 square miles of drainage area empties from the east into the Russian River. (See Plate 3)

The river continues in a southeasterly direction for 15 miles through rich farmland, turning west on its way to Healdsburg through the Fitch Mountains where it enters a winding gorge into which flows Maacama Creek with a drainage area of 83 square miles. (See Plate 3)

About 2 miles below Healdsburg is the mouth of Dry Creek which has a drainage area of 218 square miles and is the second largest tributary in the Russian River basin. (See Plate 2)

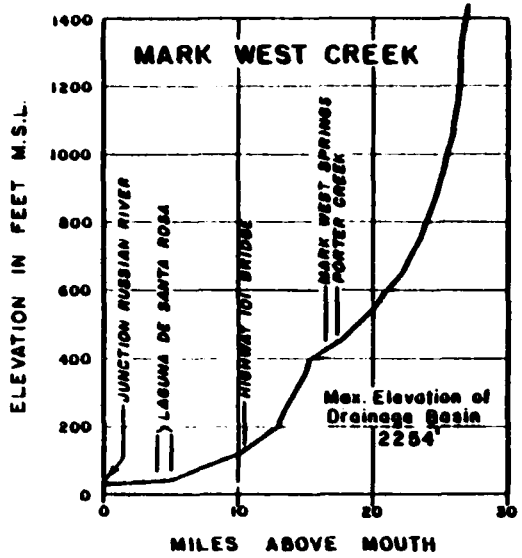
The river flows south again to a point 6 miles below Healdsburg near Mirabel Park where it suddenly veers sharply to the west. Joining the river at Mirabel Park is Mark West Creek which, with its sub-tributaries Santa Rosa Creek, Windsor Creek and Laguna de Santa Rosa, drains an area of 255 square miles. The river then courses a distance of 29 miles through a long mountainous gorge to the Pacific Ocean at Jenner. (See Plates 2 and 3)

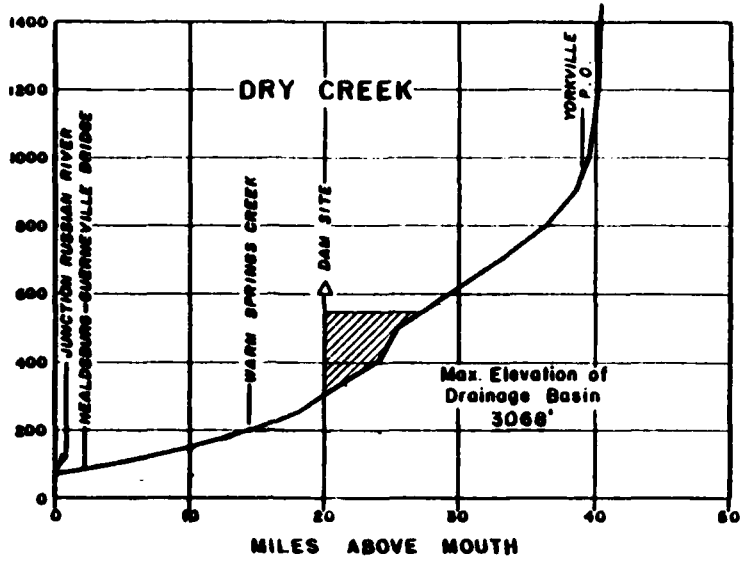
Character of the River

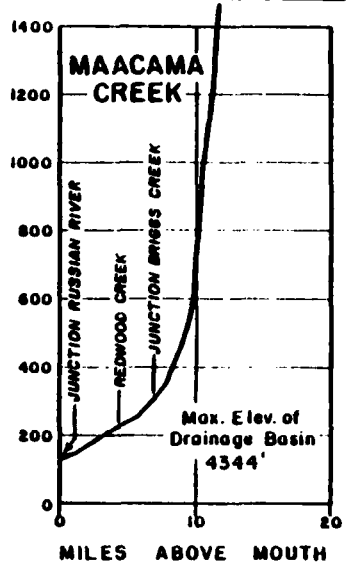
In the valleys, the river channel is generally wide, shallow and unstable. The stream bed slope is about 8 feet per mile in the upper valley reaches and flattens to 2 feet per mile near the river's mouth. Its instability was described in 1938 by a Ukiah farmer:

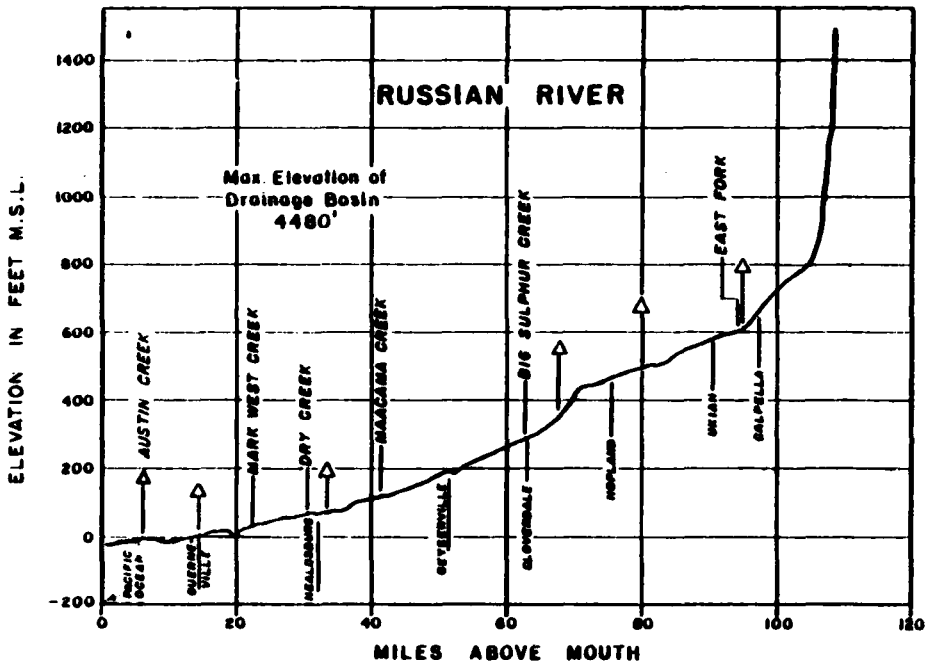
> In our valley of the Russian River the river will run from a mile to four or five miles in width and the river is very crooked. It will first hit one bank and then hit the other, and it is very hard for a person to control the banks. The greatest danger we have is in a crooked stream, when it hits one side, it diverts directly back to the other. After a while it gets deep enough in the turn, it is very apt to go directly over and isolate a large piece of land. (Crawford, Leslie, 1938:30)

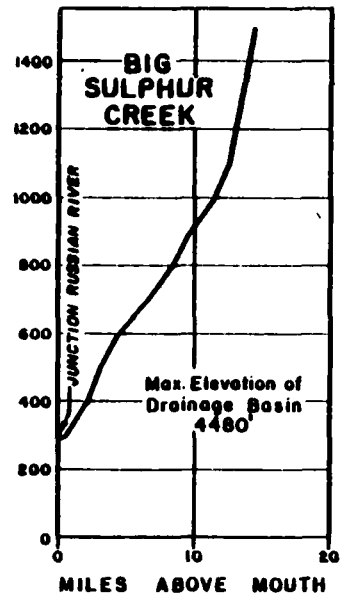
In contrast, the river's channel is very stable and deep through the rocky gorges with steep stream slopes of up to 45 feet per mile. It has far greater channel flow capacities in the gorges, estimated at 45,000 cubic feet per second (cfs) above Cloverdale, than in the valleys, estimated at 8,000

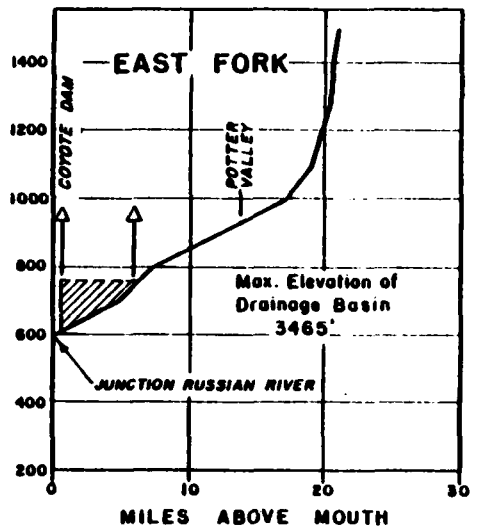












△---ACTIVE STREAM GAGING STATION

RUSSIAN RIVER PROJECT
MENDOCINO AND SONOMA COUNTIES, CALIFORNIA
RESERVOIR REGULATION MANUAL
COYOTE DAM

PROFILES OF RIVER AND PRINCIPAL TRIBUTARIES

IN 31 SHTS. 23 JUNE 1958 SH NO 3
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FIG. A-

Plate 3

Flood debris left in orchard, 1937.

Plate 4

Orchard uprooted by flood waters, 1937.

Plate 5

cubic feet near Ukiah, for example. At bankfull, the river at Guerneville has reached depths of 50 feet whereas in Alexander Valley at bankfull, the river's maximum depth is 14 feet.

River Flow

The amount of water in the Russian River has always been significantly affected by the season - low in the dry summer months and at flood levels in the wet winters. The basin area receives little or no rainfall during the summer and fall and ground water is generally unaffected by snowmelt. The natural runoff from the watershed decreases rapidly after the spring rains and is virtually nonexistant in the late summer and early fall. Prior to 1908, when Eel River water was first diverted into the East Fork of the Russian River, the river very nearly dried up in July, August and September. An early flour mill located on the East Fork in Coyote Valley had to turn its wheel in the summer and fall by means of water diverted from year-round Cold Creek to the east through 1½ miles of flume.

On the other hand, in winter, heavy rains often swell the river to flood stage. The frequency of flooding on the Russian River was one of the highest in the state before the construction of Coyote Dam. Flood conditions result from prolonged moderate to heavy precipitation, followed by a period of short but intense rainfall. The absence of snowpack to lessen the amount of ground water, coupled with the area's steep slopes causes rapid run-off and the subsequent accumulation of flood

flows which rush to the ocean within a few hours or, at most, two to three days after the rain stops. A description of the great flood of 1964-65, locally called the "100 Year Flood", illustrates such a situation:

> Streams rose until they overran their banks and calamitous flooding resulted. Surging waves, swollen with accumulated debris, fallen trees, sawn logs, and lumber, battered down highway and railroad bridges, overturned autos, smashed houses and farm buildings and engulfed entire communities...
> (State of California 1966:6)

Flood Damage

Major damaging floods occured in the Russian River or its tributaries as follows:

> 1877-1885-1889-1893-1903-1909-1911-1925-1937-1946-1950-1955-1958-1962-1963-1964-1965, 1974.

Damage from Russian River flooding has been extensive. The steep topography of the drainage area has confined most development and habitation to the bands of flat land along the river channels. The same forces that created the rich plains on which people have historically settled - namely floods - are the ones that periodically destroy the fruits of settlement.

> "Practically each and every farmer on Russian River has his own particular fight with that old monster, because she has shown herself to be a monster.
> (Dutton, Edward 1938:47)

The damage caused by floods of the Russian River was

made more severe by settlement itself. Unwise flood plain management allowed destructible buildings to be erected on potential areas of inundation. The planting of willows and other densely rooted trees, while building up the plain itself and holding the river's banks, also resulted in the collection of debris and the creation of log jams which the swift and swollen currents surrounded by cutting deeply into the adjacent topsoil. Timber harvesting practices and the overgrazing of hillsides caused sheet and gully erosion. The washing of unprotected soils and gravels into the stream-bed made it rise, thus producing higher flood levels. Inadequate stream crossings and drainage practices allowed great damage to roads and bridges.

While there is little danger to human life from Russian River floods, extensive property damage is common. The periodic flooding of the river has caused tremendous economic disability to the region. Highways, streets and bridges as well as residences have been destroyed by high water. Some recreational facilities and businesses have faced almost yearly reconstruction costs. But the most severe damage in Mendocino and Sonoma Counties has been to agriculture. Whole orchards have been washed away in a two-day flood. Entire crops have been ruined by trapped and standing water left in a flood's wake. Ranches and farms have lost significant acreage to the sweeping waters. (See Plates 4 and 5)

Local attempts at flood control were tried on a year to year basis. The individually constructed levees and bank works were largely unsuccessful due to the river's strength

and constantly changing course. There was a need for channel clearing and permanent flood control measures but the expense and coordination of such projects were beyond local means.

Eel River Diversion (For a complete history of Van Arsdale and Scott Dams, see Appendix A)

Since 1908, water from the South Fork of the Eel River has been diverted from Van Arsdale Dam through a transmountain tunnel to a powerhouse in Potter Valley, and then into the East Fork of the Russian River. Until 1922, the amount of water diverted was based on the natural flow of the Eel River at the point of diversion and subject to seasonal limitations. From the 1922 completion of Scott Dam, however, the flow of the Eel River has been controlled and even. Its benefit to the Russian River, prior to Coyote Dam, was dependent on the needs of power-plant operation in Potter Valley which sometimes necessitated shutting off the outflow into the East Fork. Also, part of the imported water from the Eel is used for irrigation in Potter Valley. The unused portion and the return flow from irrigation go directly into the Russian River's East Fork.

Before summer flows in the Russian River were increased by Eel River water, dry farming in the river valleys was practiced extensively. Dry pasture, grapes, prunes, hay, grain, and apples were the important crops. Small private dams were constructed on the Russian River to store winter water and were used extensively by their owners on individual ranches. But, after 1922 when Eel River water became available, wide-spread irrigation was practiced. Water was generally pumped from the

main stream or from wells in former channels or gravel bars. Pumping was done by individual farmers using power from electric or gasoline engines. Increased irrigation caused a shift in preferred crops allowing the production of hops, pears and grapes. Although the hop industry in Mendocino County failed due to a fall in prices, pears and grapes continued to form a major portion of the region's economy. Irrigation significantly increased crop production and is now also used to provide frost protection for grapes.

New urban development and accompanying industry increased the Russian River basin's need for water and the area's centers of population are dependent on Eel River water for domestic and industrial use.

The scenic areas along the Russian River's lower reaches have long been popular resort sites. The increased flow of water from the Eel River, held in small temporary dams, provided swimming facilities. However, in the 1930's and 40's, intensified irrigation on the river's upper reaches and the subsequent conversion of pasturage to orchards and vineyards decreased the summer flow in the lower channel.

The resulting conflict between recreational developers in Sonoma County and ranchers and farmers in Sonoma and Mendocino Counties over the use of Russian River water played an important role in the history of the Coyote Valley Project. The question of Russian River water rights will be discussed in subsequent chapters.

CHAPTER TWO

THE COYOTE VALLEY PROJECT

> Our ranches are going downstream and we haven't the finances or the strength or the intuition or anything else to combat them alone; we need help. (Dutton, Edward 1938:47)

Ranchers and farmers along the Russian River in Mendocino and Sonoma Counties had been fighting the river for years. Its habit of cutting through banks and shifting its channel in agricultural regions caused the great damage to crops and land described earlier. Local flood control works, such as levees and jackstraws to hold the banks, were constructed periodically by farmers and other property owners. (See Plate 6) One farmer piled -

> "...a lot of brush, a lot of hop vines into one of these cuts; we took hog wire, stretched it along on top of these cuts, and weighted it down with cement blocks weighing up to 250 pounds apiece, blocking it all over..."

Channel clearing, another method of flood control, made necessary by the growth of willow roots which obstructed the main channel by building up layers of debris and gravel, was also practiced on a limited basis. But years of build-up required the use of heavy equipment not readily available to most riparian owners.

A series of damaging floods in the 1930's, coupled with the impermanence of such local flood control works, prompted frustrated farmers, ranchers and resort owners to form groups to deal with flood problems. Additional pressure from farm

organizations and Chambers of Commerce resulted in requests to state and federal agencies from Mendocino and Sonoma County Boards of Supervisors for help in controlling the Russian River. However, it would take more than a decade of planning, research and design before such help would be made available to the Russian River basin.

The State of California had no appropriations for a long-term project and could provide emergency funds only for the replacement of existing works. The federal government, however, in its 1937 amendment to the Flood Control Act of 1936 which charged the War Department with the investigation of flood control measures for several river systems, opened the way for the preparation of a long-term solution for local water problems. The Russian River was nominated for study under the amendment by First Congressional District Representative Clarence F. Lea, with support from San Francisco District Engineer, Lt. Col. J. A. Dorst of the United States Army Corps of Engineers (hereafter referred to as the Corps).

1938 Public Hearing

As a result, a public hearing was held on September 13, 1938 in Santa Rosa by the Engineer's Office of the War Department to discuss Russian River flood control problems. Prior to the hearing, concerned private interests and Mendocino and Sonoma County and city governments had formed the Russian River Flood Control Association to coordinate flood control plans. This group, staffed by the North Coast District Office

of the California Chamber of Commerce, under the direction of V. M. "Bob" Moir, raised money for a study of their own. They hired Gerald McKinlay, an engineer who took a leave from the Sonoma County Engineer's Office to investigate and report on Russian River basin flood control problems and their solutions. His report, entitled Preliminary Report on Russian River Flood Control was made available to the War Department and other federal and state agencies and formed the core of the hearing.

McKinlay proposed bank protection, channel improvement, levee construction, flood-plain zoning and by-pass channels. He concluded that the construction of storage dams "was not physically possible or economically feasible". His recommendations were supported by the testimony of local farmers and ranchers.

Despite McKinlay's report, Lt. Col. Dorst, who presided over the hearing, stressed that storage dams were essential to Russian River flood control. He ended the hearing by asking for the assurances of local cooperation required by Section 3 of the Flood Control Act of 1936 which did not allow construction monies without them. The conditions were:

a) Provide without cost to U.S. all lands, easements and rights -of-way necessary for project construction,

b) Hold and save U.S. free from damages due to construction work,

c) Maintain and operate all of the works after completion in accordance with U.S. regulations.

Lt. Col. Dorst asked the audience to register objections

to each condition and from the lack of response concluded that such a program was agreeable to all interested parties. He then explained the complicated process connected with federal involvement in flood control. (For an in-depth explanation of such procedures, see Ramiller, Neil 1978 and refer to Plate 7 for more contemporary procedures.)

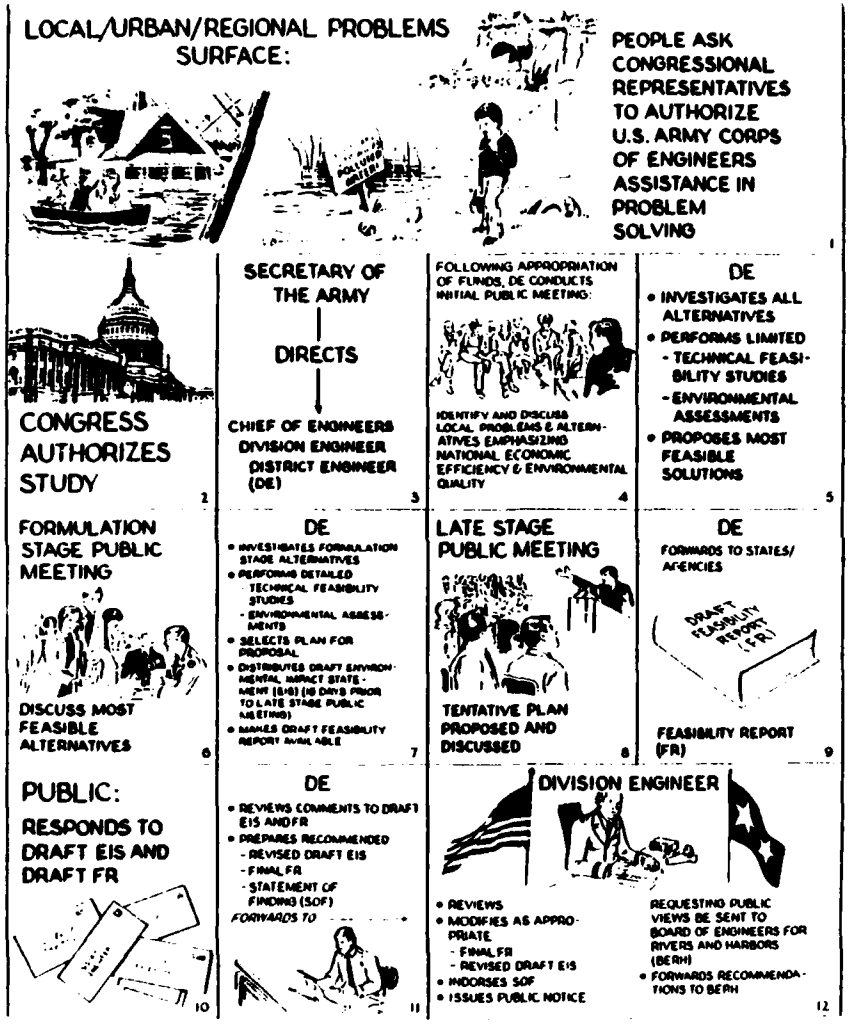
Studies and Surveys

After the ground work laid by the public hearing, the San Francisco District of the Corps of Engineers initiated preliminary studies of the Russian River basin which were completed on May 18, 1939.

On July 11, 1939, the Chief of Engineers, on the basis of the preliminary studies, ordered a full scale survey of the Russian River Basin and its problems. The survey was directed by Lt. Col. Kenneth M. Moore, Engineer for the San Francisco District. During the course of the investigation, a model flood, one which exceeded the severity of any recorded flood to date, was hypothesized. On the basis of the relatively small damage such a flood would inflict, it was concluded that a project for flood control alone would not be economically justified. Therefore, the survey was expanded to consider a dual purpose project, adding the development of water conservation to flood control plans. Two dams were estimated at a total cost of $4,788,000. One, located on Dry Creek, Sonoma County, would cost $1,920,000. The other, on the East Fork of the Russian River, Mendocino County, would require a Federal share of $1,544,600 and a local

Flood control works, jackstraws, on Russian River south of Ukiah, 1937.

Plate 6



HOW U.S. ARMY CORPS OF ENGINEERS PROJECTS ARE CONCEIVED, AUTHORIZED, FUNDED AND IMPLEMENTED

EP-1105 2-10 Mar 1975

PLATE 7

share of $1,323,000 for an estimated total figure of $2,868,000.

The addition of water conservation to the project brought strong support from the recreation industry on the lower reaches of the Russian River, who were concerned about the effect of reduced stream flows (as a result of increased up-river irrigation) on their businesses. The Russian River Recreation Association informally contacted the Corps and indicated their active support for reservoir construction. The Corps' engineers then specified in their report a minimum flow of 125 cubic feet per second (cfs) at Guerneville as a necessary water conservation measure to maintain downriver recreational facilities.

The report was submitted to the Board of Engineers who returned it on June 18, 1941 with an unfavorable judgment. They were concerned with the validity of water conservation benefits and the financial participation of local interests toward these benefits as the federal government would only contribute to the flood control aspects of the project. The Board requested further clarifications of these issues and planning for Russian River flood control came to a halt.

In the summer of 1944, local interests, with the support of the South Pacific Division Engineer and the San Francisco District Engineer, officially requested the Office of the Chief of Engineers to restudy the area. In December of the same year, the new Flood Control Act of 1944 allowed for the consideration of on-site recreation as a calculable benefit of reservoir construction. The new legislation expanded the possibilities

for a Russian River basin project.

1945 Public Hearing

As a result of these events, a second public hearing was held on June 27, 1945. It was run jointly by the Corps of Engineers and the Bureau of Reclamation (which was involved in its own study of Russian River water development). A new local organization, the Russian River Water Resources Commission, again under the direction of V. M. Moir, and Mendocino and Sonoma Counties' Boards of Supervisors hired Donald R. Warren Company, Engineers, to prepare another study of the basin to consider the new aspects of recreation, irrigation, and urban water requirements in addition to flood control and water conservation.

As in the first hearing, local testimony favored immediate flood control works over a long-term storage project. Farmers feared that the development of large dams would inundate agricultural acreage and destroy valuable farm land due to the resulting over-saturation of soils in project areas. There was also a general concern for the geologic instability of dam foundations. A few favorable comments were directed toward the placement of dams in mountain areas near the headwaters of tributaries.

Although all five Sonoma County Supervisors testified at the hearing, no Mendocino County Supervisors were able to attend.

Further in-depth studies were conducted by the Corps from 1945 to 1948 and included surveys for a two-stage dam on

the East Fork of the Russian River and appraisals of land and property to be acquired for such a project.

Survey Report

On September 9, 1948, the result of years of study was presented in a final report entitled Survey Report on Russian River, California for Flood Control and Allied Purposes. The Corps identified three major problems in the Russian River basin: 1) flood damage, principally affecting agricultural lands and secondarily, population centers, highways, bridges, residences, etc.; 2) insufficient water supplies for a rapidly expanding bi-county population; and 3) limited down-stream flows due to increased up-river irrigation. The report placed the blame for these problems on the area's seasonal rainfall which produced too much water in the winter and not enough in the summer. The solutions proposed by the Corps were two-fold: 1) channel stablization works from the river's mouth to Calpella and on the lower reaches of major tributaries at a cost of $900,000; and 2) the construction of two reservoirs to conserve winter run-off for flood control, provision of local supplies, export to the Bay Area and the maintenance of minimum flows for recreation.

The first reservoir to be constructed was to be a two-stage, multiple purpose dam of 199,000 acre feet on the East Fork of the Russian River in Coyote Valley. A multiple purpose dam of 216,000 acre feet on Dry Creek was to follow at a later time. The first stage of Coyote Dam would have a storage

capacity of 122,000 acre feet. Of the total, 48,000 acre feet would be reserved for flood control; 70,000 acre feet for conservation and storage to provide releases for domestic, industrial, and agricultural uses, and for augmentation of summer flows; and 4,500 acre feet for siltation. Construction of the first stage of Coyote Dam was estimated at $16,250,000 and maintenance of the project was estimated at an annual sum of $18,900, considerably more than the original cost estimates of 1939.

The proposed developments were expected to meet all local needs and all potential irrigation requirements over an estimated 48,300 acres. Other benefits of the project would extend to on-site recreational development, and improved fish and wildlife due to increased downstream flows.
Because of new flood protection, the development of previously threatened acreage was foreseen.

The proposed Coyote Valley Project required the financial participation of local interests as had been explained by Lt. Col. Dorst ten years earlier at the first public hearing on the Russian River basin. The local share was to be 57.4 percent of the first costs and was not to exceed $9,330,000, payable without interest over a period of 40 years. Participation included a contribution to the maintenance and operation of the project; the provision of lands, easements and rights-of-way for channel stablization works; the maintenance of such works; protection for the United States from any damage incurred during construction; and the adjustment of all water rights claims. Supervisors of both counties passed resolutions

stating their support for channel stablization works and Coyote Dam but reserved a decision on the Dry Creek Dam.

Local participation was eventually modified to a 60 percent share of conservation and storage benefits payable in a lump sum of $5,578,000. The California State Department of Public Works, Division of Water Resources, offered to assume the costs of acquiring lands, easements, and rights-of-way for the channel stablization works.

Water Rights

The requirement for the adjustment of water rights was to prove a source of major conflict among local interests. Problems regarding the use of Russian River water had been growing from the time of its augmentation by discharges from the Eel. Dissension stemmed from the intensified usage of upstream water for irrigation by expanding agricultural concerns which lessened the downstream flows so necessary to the recreation industry on the river's lower reaches. The California State Water Code gave priority of use to domestic and agricultural needs and so down-river recreation users could not be guaranteed the amounts of water essential to their businesses.

The Coyote Valley Project, supported in large measure by the recreation industry, would chiefly benefit those interests by providing a guaranteed minimum down-river flow although the project also claimed a minor benefit to agriculture by supplying more water for irrigation. Conflict

among upstream and downstream users of Russian River water followed county lines making Mendocino County extremely wary of Sonoma County's intentions toward what it considered native water.

The issue of water usage was further complicated by the fact that the water in question, especially in the thirsty summer months, was essentially foreign water coming into the Russian River's channel from the Eel.

To fully understand succeeding events, it is necessary to review California's definition of riparian rights. Such rights in California are not covered by statute but are a modification of common law. (For a general understanding of California water rights, see Appendix B.) A riparian right is one attaching to a piece of land which borders or fronts on a natural watercourse. It entitles the owner of such property to a "reasonably beneficial use" of the natural flow of water which passes his land. The claim of riparian right does not allow the storage and deferred use of water. It also does not apply to foreign water, i.e. water originating in a different watershed.

Appropriative water rights, established by the early gold miners, are acquired by simply taking and benefically using water. Prior to 1872, such a right could be claimed from the date of the first substantiated act toward putting the water to beneficial use.

After 1872, California enacted legislation providing for a permissive procedure for the appropriation of water.

Appropriative rights could be established by posting and recording proposed diversions. This procedure remained in effect until 1914 and many local applications of this type were filed.

In 1914, new legislation required the issuance of a permit confirmed by a license from the State Water Rights Board for the legal appropriation of water. Priority was given to domestic use followed by irrigation, industrial and recreational usage in descending order. Between 1914 and 1949, eight licenses were issued under this law for water appropriation on the Russian River in Mendocino County.

On January 29, 1949, the State of California, through the Department of Finance, filed Applications No. 12919 and 12920 for the appropriation of Russian River water. (See Appendix C.) Each application was for an identical amount of water: 550 second feet of flowing water and 200,000 acre-feet of stored water. However, the applications specified different uses. The first was for municipal, industrial and recreational uses, while the second was directed toward irrigation, domestic and flood control purposes. Both applications carried assurances that they were not in conflict with, but promoted, a general plan of watershed development, e.g. Coyote Valley Project. This action also created two agencies, the Sonoma County Flood Control and Water Conservation District and the Mendocino County Flood Control and Water Conservation District, legally constituted to engage in contracts with the United States.

The State Department of Finance was able to file on Russian River water by provision of Secton 10500 of the State Water Code which reads in part:

> The department shall make and file applications for any water which in its judgement is or may be required in the development and completion of the whole or any part of a general or co-ordinated plan looking toward the development, utilization, or conservation of the water resources of the State.
> (State of California Water Rights Board, Decision D 1030 August 17, 1961:1)

The applications covered sufficient water to insure the ultimate capacity of Coyote Valley Project works as envisioned by the Corps of Engineers.

Following these filings by the State, water users in both Mendocino and Sonoma Counties became aware that their individual water rights might be in jeopardy. A rash of more than 200 applications was quickly filed, mostly for stock watering and irrigation, although some were eventually cancelled.

These appropriations of Russian River water were the final stages of planning for the Coyote Valley Project. The Plan of Improvement for the Russian River Basin was adopted by the 81st Congress in its second session and became part of the Flood Control Act of 1950, Public Law 816, on May 27, 1950. The plan stipulated:

1) A 2-stage multiple purpose reservoir on the East Fork of the Russian River at Coyote Valley,

2) Channel stablization works along the Russian River and its tributaries, and

3) Multiple-purpose reservoir on Dry Creek.

Coyote Dam thus became the first major Corps project in the Russian River basin. Due to the Korean War, funds for construction planning were not available until 1953, but even after the assignment of monies, problems regarding rights to the river's water continued to plague the project.

CHAPTER THREE

LOCAL PARTICIPATION

> We think Coyote Dam is needed badly both by Mendocino County and by Sonoma County. We think other dams are also needed in this watershed, but for the present let's get this one job done and over with and stop the arguments.
> (Ukiah Daily Journal Vol 2., No. 186, January 11, 1956:10)

Water Assignments

The conflict between Mendocino and Sonoma Counties regarding the use of Russian River water came to a head in February, 1954, when Sonoma County announced its application for the appropriation of 280 cubic feet per second of Russian River water to assure itself of water resources in the event that Coyote Dam would not be constructed. The Mendocino Bar Association immediately warned Mendocino County water users to protect themselves by securing their own permits. The warning was heeded by the City of Ukiah, the Masonite Corporation and many individuals who likewise filed on Russian River water.

The fears of Mendocino County were based on the ruling that foreign water was not covered by riparian rights and on the possibility that the dam might not be built due to the lack of local financial support.

Notice of intention to file was given on December 14, 1953 by the Chairman of the Sonoma County Board of Supervisors, James E. Lyttle. The application to the California State

Division of Water Resources was for all the unappropriated waters of the Russian River, 200 cubic feet per second to be used for recreation and 80 cubic feet per second for irrigation. This application concerned the "foreign" Eel River water. Because parties who first secure appropriative rights have priority, in this case Sonoma County, Mendocino farmers envisioned the complete loss of summer irrigation water to downstream recreation. Although irrigation was considered a "higher use" of the water than recreation, various attorneys further panicked Mendocino users by stressing that earlier priority took precedence over higher use.

To halt the growing discord, Sonoma County offered to file jointly with Mendocino County, a move that was hailed primarily by the officials of both counties. The simultaneous filings in February 1954, gave Sonoma County 60 cfs for irrigation, 20 cfs for municipal use and the controversial 200 cfs for recreation while Mendocino retained 68 cfs for irrigation, 10 cfs for industrial and domestic use and 20 cfs for recreation.

Although Mendocino County's Supervisors may have been satisfied with the simultaneous filing, a public outcry followed in its wake. Voters, farm organizations, city councils, and local chambers of commerce felt that Mendocino had been "mousetrapped." The possibility of the absence of local financial support for Coyote Dam through a negative bond election was brought up. Sonoma voters were accused of wanting "no part of indebtedness on their lands," nor would

they need to become so, for a dam would be superfluous if they received 200 cfs of the 250 cfs that passed through Mendocino County without a dam. They would have all the water they needed without additional expense.

The Ukiah City Council voted unanimously to protest to the State against Sonoma's ownership of summertime "wild waters" from the Eel "just for canoe use." The Mendocino County Labor Council threatened to intervene in the hearing of Sonoma's application so that they would be able "to build another home here [in Mendocino County] with indoor-plumbing." The Mendocino County Chamber of Commerce strongly urged intervention "so that we can have water for the children to drink." (The Redwood Journal Press-Dispatch, Vol XXV, No. 138, March 5, 1954:1)

The State eventually approved the applications and all of the Russian River's water, both natural and foreign, was appropriated.

Sonoma County Bond Election, 1955

The reality of Coyote Dam, in early 1955, lay in the hands of the voters of Mendocino and Sonoma Counties. Despite assurances of local participation, actual tax dollars to finance the local share had not yet been collected.

A congressional hearing on May 3, 1955, in Washington D.C., was called to investigate the assignment of federal funds to the project. Delegates from both counties attended the hearing to testify on their need and support for Coyote Dam.

However, congressional approval for Coyote Valley Project funding was withheld until the allocation of local monies occurred.

Sonoma County, on the basis of its larger tax base and larger share of project benefits, was required to commit most of the local funds. An election was held on May 10, 1955 in Sonoma County seeking the approval of bonds in the amount of $5,598,000 to finance dam construction and an additional $8,500,000 bond issue to finance a water distribution system. Fears that local residents disapproved the project were laid to rest when an overwhelmingly favorable vote of 3 to 1 was returned. Construction bonds were approved by 15,079 to 5,683 votes and the water distribution system bonds passed 14,226 to 6,153. Construction of Coyote Dam was assured.

The results of the Sonoma County bond election were most felt in the Ukiah area. While Mendocino voters, in general, had to consider their potential role in the project and the effects of a bond issue on their rather depressed economy, Ukiah area voters, in particular, had to consider the real consequences of a large influx of population by construction personnel on their limited resources and facilities. But, for the Ukiah Chamber of Commerce and other business interests, the approval of Coyote Dam signaled a "boom" in the biggest sense of the term.

On November 14, 1955, the California State Department of Finance assigned a portion of Applications 12919 and 12920 to

Sonoma County. The amounts of water assigned were 335 second feet of direct diversion and 122,500 acre feet of storage on each application. The State reserved the remainder of the appropriated water to itself.

The partial assignment to Sonoma County was made subject to the following conditions:

1) Rights of any upstream county for its development.

2) That if and when Mendocino County elected to participate in the Coyote Valley Project, they would be reassigned a proportion of the water based on the amount of their financial contribution up to a maximum of $633,000.

Taxpayers Suit

On the heels of the favorable Sonoma County bond election, a taxpayer's suit was filed in Santa Rosa Superior Court in November, 1955, by opponents of the Coyote Valley Project. In an attempt to stop construction of the dam, the suit, filed by Walter M. and Jessie P. Robbins of Santa Rosa, charged that the public was given an inaccurate cost estimate for the project. It was claimed that construction costs had increased since the estimates were made and the fear was that local taxpayers would have to bear these additional expenses. The Robbins' were represented by the Ukiah firm of Kasch and Cook and were reputedly financed by opponents of the Coyote Project who contended that the dam was being built "in the wrong place and on the wrong stream." (Ukiah Daily Journal, Vol 2, No. 221, March 1, 1956:1)

The primary argument of the suit was that a favorable vote on bonds evidences a contract between a flood control district and its taxpayers and that construction costs must be limited to the sum voted. In the case of Coyote Dam, it was argued that the contract would be breached because such limitations did not exist. The suit also charged that the newly formed Russian River Flood Control District was without federally required water rights, easements and diversion works.

The effect of the suit was to halt the delivery of Sonoma County's $5,598,000 bond issue to the Bank of America which purchased them in December of 1955, but which could not accept them unless they were litigation-free. In a further complication, the Sonoma County Treasurer refused to sign the bonds on the same grounds as the suit. Without the local financial participation assured by the bonds, the construction of Coyote Dam was effectively stopped.

To allay fears that local residents would be required to bear increased construction costs, local Congressman Herbert Scudder authored a bill to expand the House Public Works Commission appropriation for Coyote Dam from $11,522,000 to $12,687,000. The increase of $1,165,000 was passed by the House on January 11, 1956.

The Robbins' suit was dismissed by Sonoma County Superior Court. It was then appealed to the California State Supreme Court which sent it down to the Appellate Court to be studied. At the same time, Sonoma County District Attorney Joseph Maddux

asked the State Supreme Court for a Writ of Mandate to force the Sonoma County Treasurer to sign the bonds.

On January 5, 1956, the Third District Court of Appeals in Sacramento ruled the suit "devoid of merit." The Court agreed that a contract existed but said the federal government had clearly stated that the stipulated local contributions voted on in the bond election would be "payment in full." The court concluded that the other charges regarding the flood district's lack of water rights, easements and diversion works were not material since voters had not been asked to consider those items. The Court did not issue the Writ of Mandate requested by the D.A. saying that its decision would be enough to require the Treasurer to sign the bonds.

Mendocino County Bond Election, 1956

As the date for the Mendocino County election drew near, opponents of the bond continued to argue against it. Many felt it was a serious mistake to form a flood control district and bond for money. Their position was that the dam would be built anyway and that existing riparian rights to the waters of the East Fork under the county of origin law would assure at least 11.3% of the water (the same amount allowed by the bond) without the obligation of paying for it. They advised waiting several decades until increased population and industry created both the need for more water and the added tax base to assure the county the ability to pay for it. Opponents also pointed to the loss of taxes for Coyote Valley land which

amounted to $5,700 a year.

Those in favor of the bond countered by pointing out that the loss of tax revenues and Coyote Valley land would occur whether or not the bond issue passed. They emphasized the fact that the dam was a reality and that sooner or later Mendocino County would require its water. To join at the beginning would be less expensive than later, they claimed.

The election, on January 24, 1956, was to approve the formation of a Mendocino County Russian River Flood Control and Water Conservation District; to elect trustees for such a district; and to approve a bond issue for $650,000, of which $633,000 would be paid to Sonoma County in exchange for 11.3% of Coyote Dam water. The bond would place a tax on real property of 16¢ per $100 for three years and 23¢ per $100 for 32 years. The issue had to pass by a two-thirds majority vote. Running for trustee were Frank J. Brennan, Alex R. Thomas, Jr., Don G. MacMillan, H. M. Cochrane, and Lloyd Bittenbender.

There were 5,400 eligible voters in the election. Election day was cold and rainy and the newspaper indicated that opponents were counting "on a combination of bad weather and lethargy" to defeat the measure.

Despite the bad weather, the election on January 24, 1956, was favorable. The bonds passed 3 to 1 with a 55.6% turnout by voters: 2,197 voted in favor; 701 against. All trustees who ran were elected with slightly more than 2,000 votes each. There were two write-ins for trustee: Herb Singley with 209

votes and Stanley Watson with 172 votes.

Post-election steps on completing the bond issue were: 1) canvassing of the vote by the Board of Supervisors; 2) order from the Board declaring the District formed; 3) certificate by the County Clerk to the California Secretary of State showing that the District was approved by the voters; 4) issuance, by the Secretary of State, in 10 days of a certificate authorizing the formation of an improvement district.

The bonds were sold in November, 1956 and under the terms of the State's partial assignment to Sonoma County, 11.3% of the water was reassigned to Mendocino County.

Continuing Conflict

In 1956, the Mendocino County Board of Supervisors protested to the State Board of Water Resources that the allotment of 11.3% of the Russian River's water to the county in which it originated was "too low a figure." The protest was received without comment.

Although the "foreign" water of the Eel River has augumented Russian River flows, the stream is regarded by Mendocino County water users as riparian water. Its full flow has been used since 1922 and a great percentage of the economy of Ukiah and Hopland is directly dependent on it. Because of such dependence and the long period of use, it is conceivable that Russian River water could be declared "native" water for the purpose of water rights applications. As of 1978, this question has not yet been settled. The net effect of this problem is that

someday the Russian River will be a "controlled stream" and those unable to establish water rights will have to purchase water.

The original State application divided the water as follows:

Application #	Amount	Sonoma County	Mendocino County
12919	335 cfs	297 cfs	38 cfs
12920	122,500 acre ft	114,500 acre ft	8,000 acre ft

Thirty-eight cubic feet per second flow and 8,000 acre-feet of stored water represents Mendocino County's 11.3% of project water for which $633,000 and interest was paid. It is unclear what water constitutes Mendocino County's percentage. The County's share of flowing water might be 11.3% of actual stream flow which averages 140 cubic feet per second. In this case, Mendocino County's share would be 11.3% of 140 or 15.8 cfs. On the other hand, Mendocino's share of project water might also be 11.3% of the 335 cfs total flow assigned regardless of actual flows. The resolution of this question is extremely important especially in drought years when the demands of the downriver recreation industry could leave Coyote Dam and the rest of Mendocino County nearly dry.

CHAPTER FOUR

COYOTE DAM

> I'm optimistic. Local authorities are always pessimistic. Some place in between we'll meet. But I've never seen any real problems before and I don't expect any here.
> (Charles Beatie, Coyote Dam Project Engineer in Ukiah Daily Journal, June 13, 1956:1)

On March 1, 1956, the Bank of American took final delivery on the $5,650,000 bond issue from Sonoma County. The Taxpayer's Suit was dropped shortly afterwards. The way was clear for the construction of Coyote Dam.

Coyote Valley - The Dam Site

The tributary chosen as the site of the new dam was the East Fork of the Russian River which emanated from Potter Valley, northeast of Ukiah, and, augmented by water diverted from the Eel River, flowed southwest to join the main branch of the Russian River through a small agricultural valley called Coyote. (See Plates 8 & 9)

Coyote Valley was the home of the Shodokai Pomo, a band of Northern Pomo speakers, for hundreds of years. Shodokai, meaning "Valley in The East", was also the route of a major Indian trail from the Ukiah Valley to Potter Valley and Lake County. (See Peri, David W. and Scott M. Patterson 1976, Chapter 6.)

Traditional Native-American life was disrupted by the coming of Whites to the area in the 1850's. Subsequently, local

Indians were forcibly removed from their villages to government reserves in isolated areas. The reserve programs were unsuccessful and gradually Indians returned to their traditional homes only to find their land occupied by White settlers. In Coyote Valley, a small group of returning Indians purchased a parcel of land along the East Fork of the Russian River and established a small village there which came to be known as the Old Rancheria. (See Peri, David W. and Scott M. Patterson 1976, Chapter 6.)

In 1909, the United States Government, through the Bureau of Indian Affairs, purchased 101 acres in Coyote Valley for the benefit of local Indians, some living on the Old Rancheria and some living on rancherias in the Ukiah area. This offical Coyote Valley Rancheria existed until 1957 when the Corps of Engineers acquired the property for the dam.

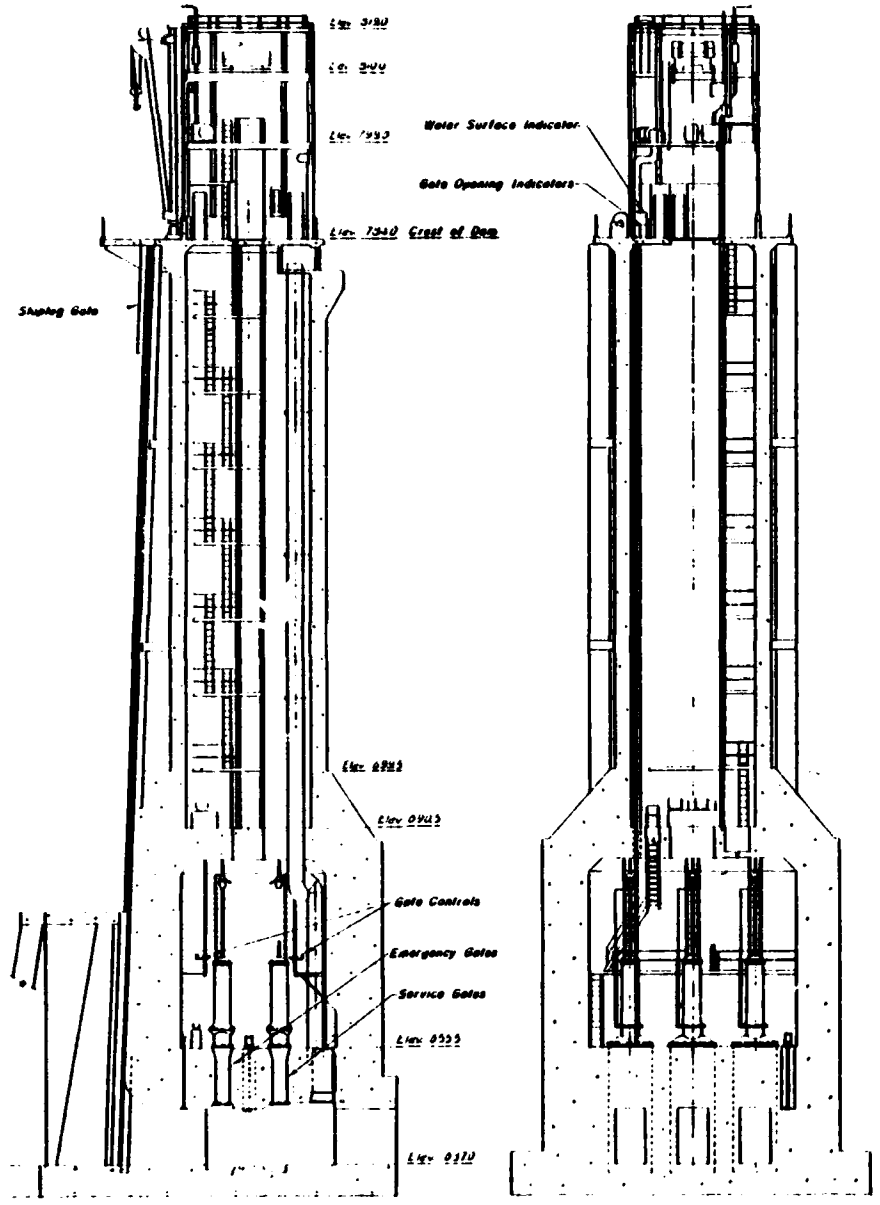
Seven Native-American families were required to relocate due to the sale of the rancheria. Six remained in the general area and one moved to Santa Rosa. All were greatly disturbed by the repetition of forced removal and were confused as to their status and rights with the government. The Indians from Coyote Valley were never officially "terminated" and are legally still eligible for government benefits. At the present time (1978), the Coyote Valley Band is attempting to recover its lost land base and is working through the Mendo-Lake Pomo Council with the Corps of Engineers to develop an Interpretive-Cultural Center at Lake Mendocino, the site of their former homes, to house on-going Native-American cultural activities. (See Peri,

Coyote Valley Dam Site, 1954, looking south

PLATE 8

Spillway area just right of center, 1957, looking southwest

PLATE 9



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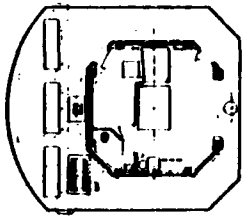
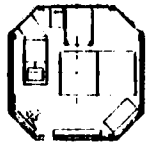


FLOOR PLAN
ELEV. 7940



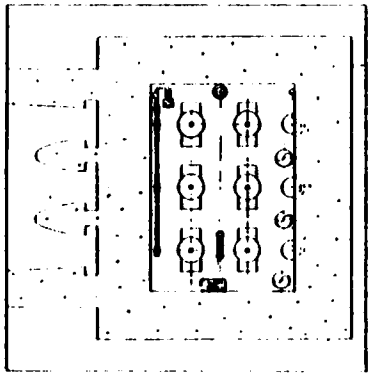
FLOOR PLAN
ELEV 7990

NOTES:

Service Gates: Three 5' by 9' hydraulically operated slide gates. Control for each gate. Gates may be operated singly or in combination. Speed of opening or closing approximately one foot per minute.

Emergency Gates: Three 5' by 9' hydraulically operated slide gates. One control for all gates. Operated singly by valve manipulation.

Stoplog Gate: One gate 6'-11 1/2" by 15'-9" fabricated from 14 WF 38 beams - all welded construction. Provided with rollers and rubber seals. Hung on lower with derrick and hoist for lowering on steel gate guides into one of three steel gate frames.



FLOOR PLAN
ELEV 6895

GRAPHIC SCALE

RUSSIAN RIVER PROJECT
MENDOCINO AND SONOMA COUNTIES, CALIFORNIA
RESERVOIR REGULATION MANUAL
COYOTE DAM

INTAKE TOWER

IN 24 SHEETS SHEET NO 15

U S ARMY ENGINEER DISTRICT, SAN FRANCISCO, CORPS OF ENGINEERS

APRIL 1958

61-47-12

FIG A-19

PLATE 10

David W. and Scott M. Patterson 1976, Chapter 7.)

White settlement in Coyote Valley was well established by the 1860's. The valley's land was developed agriculturally and it remained a small farm and ranch environment until the late 1940's (see Peri, David W. and Scott M. Patterson, Chapters 8,9,10,25,26). At that time, expansion of the real estate market encouraged the subdivision of large ranches and brought an influx of non-agriculturally oriented people into the valley who built homes there but worked elsewhere.

These newcomers to the valley did not see themselves as part of a Coyote Valley community as had the long-term residents before them. Therefore, when the valley's land was acquired by the Corps, residents reacted as single families rather than as a community. Newcomers, for the most part, were amenable to selling their property and felt they received fair prices. Older residents were bitter and resentful of losing "land that had belonged to their people for years." Two families who were forced to relocate were descendents of original Coyote Valley settlers and had retained their family property for almost one hundred years. One of these, an elderly couple, tried unsuccessfully to organize the valley's inhabitants to resist the Corps' takeover. They did succeed, however, in winning a lawsuit against the Corps to obtain additional money for their property and improvements. This family suffered great tragedy as a result of having to leave Coyote Valley. The husband died shortly after their move, "from heartbreak" his family said, and his

wife experienced a nervous breakdown from which she has never completely recovered.

The Coyote Valley residents who held out longest against selling their homes found it difficult to replace what they had for equal value. They claimed that Ukiah realtors deliberately raised the prices of available property to take advantage of their need to resettle quickly.

Some relocated residents had plans to transplant trees, shrubs and plants from their Coyote Valley properties to their new homes but were prevented from doing so by looters from Ukiah who stripped the empty houses of all removable items.

A Ukiah contractor purchased several Coyote Valley homes and moved them to the flat west of the valley where they still stand.

State Highway 20, which ran diagonally across Coyote Valley, was relocated to the valley's north end and Coyote Valley's land, a home to many different people for thousands of years, was cleared.

Construction

Bids for construction work were solicited in two phases: first, the construction and installation of 3 gates; and then, the labor, materials and equipment for an earthfill dam including outlet works, spillway, intake channels, project offices, access roads, utilities and appurtenant works. There were a total of 38 items in the second bid. Eight bids were received for the major construction phase with a high bid of $3,777,777

and a low bid of $7,467,750. In both instances, the low bidder was Guy F. Atkinson Company of San Francisco which was awarded the entire contract on June 16, 1956. The dam, outlet works, and spillway were to be completed in 900 calendar days and an additional 195 days was alloted to finish roadwork, clean up and remove equipment. Later contracts would be let for the clearing of the reservoir area and the relocation of Highway 20 which ran directly through the area to be inundated. The ground breaking ceremony was held on July 24, 1956 at the west end of the dam adjacent to old Highway 20. It was attended by representatives of a wide variety of federal, state and local agencies. The 6th Army Pipe Band, in Scottish dress, entertained the crowd between speeches. An explosion signaled the start of the project. The ceremony ended with a barbecue at Ukiah Municipal Park.

The Dam and Appurtenant Works

Coyote Dam is a compacted, zoned, earthfill embankment. The crest elevation of the dam is 782 feet above mean sea level. Crest length is 3,500 feet and crest width is 20 feet. Its maximum height above stream bed is 160 feet. The outlet works are located near the center of the dam and consist of a single concrete counduit 1,000 feet long and 12.5 feet in diameter, with three rectangular gates, each 5 feet by 9 feet, housed in an intake tower. (See Plate 10) An approach channel, a concrete exit portal and a discharge channel complete the works. The discharge capacity of the outlet is 6,500 cubic feet per second

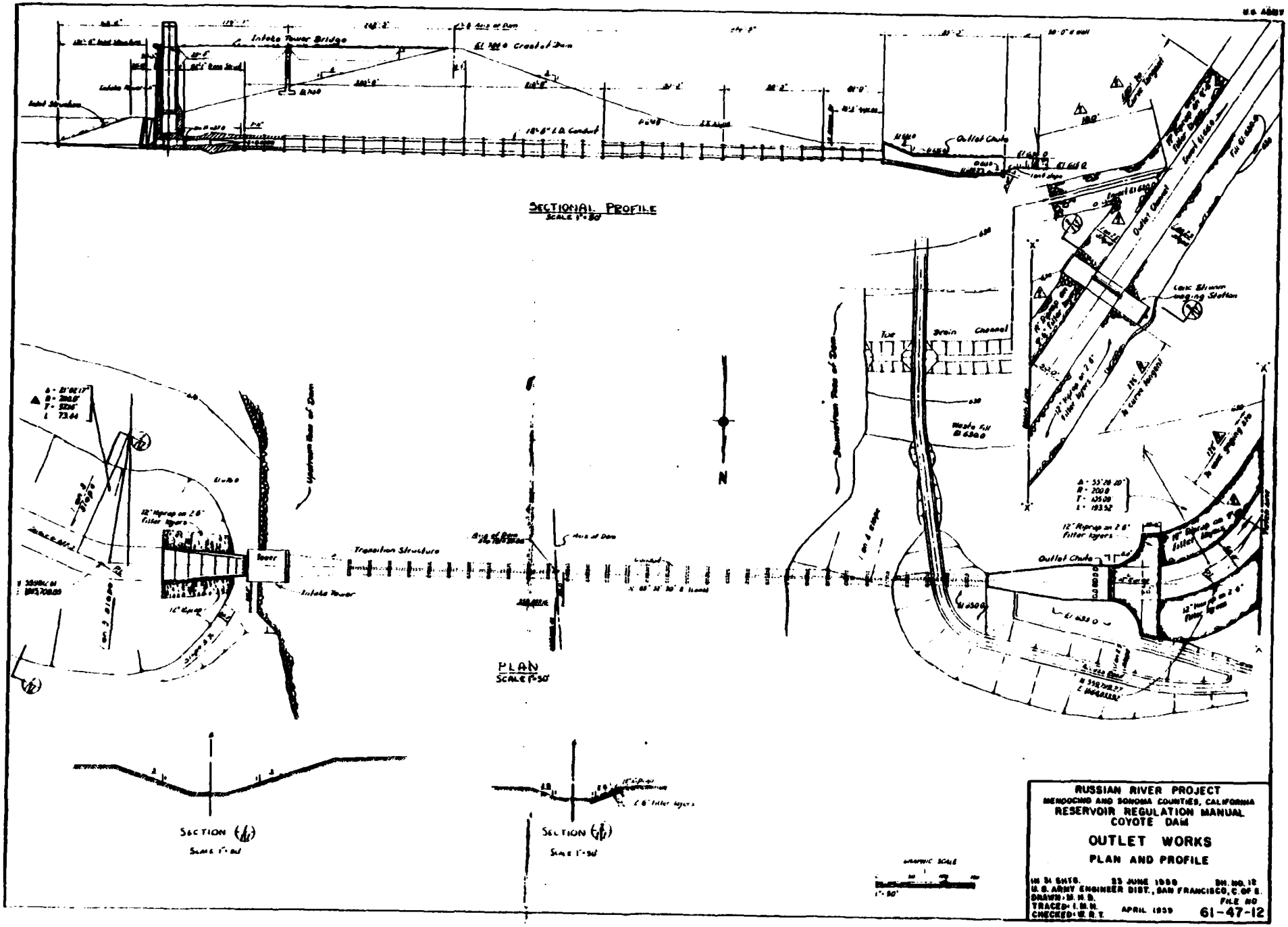
at the bottom of the flood control pool. (See Plate 11)

The spillway is cut through the left rim of the reservoir about three-quarters of a mile upstream from the dam site. It discharges into Howard Canyon which enters the main Russian River about 1½ miles downstream from the confluence of the East Fork and the Russian River. The spillway consists of an approach channel, a broad, crested concrete weir, chute, flip bucket and an exit channel. The width of the crest is 200 feet and its elevation is 765.7 feet. Its discharge capacity at the elevation of maximum flood water surface is 30,200 cubic feet per second.

The materials used in the dam were obtained from the required excavations and borrow areas located within the reservoir area. The materials were distributed throughout the dam in zones with the more impervious material in the central core of the dam. (See Plate 12) The central core (Zone C, estimated quantity of 977,000 cubic yards) material consisting of fine grained clays, silts and sand was obtained from the required spillway excavation. Random material (Zone B, estimated quantity of 2,690,000 cubic yards), consisting of tenase and recent alluvial deposits and overburden material from the borrow areas were placed upstream and downstream of the central core. For the upstream face of the dam, selected gravelly material (Zone A, estimated quantity of 1,026,000 cubic yards), was obtained from the borrow areas. An eight foot wide vertical drain consisting of filter graded pervious sand and gravel were placed between the central core and downstream random material. The

CORPS OF ENGINEERS

U.S. ARMY



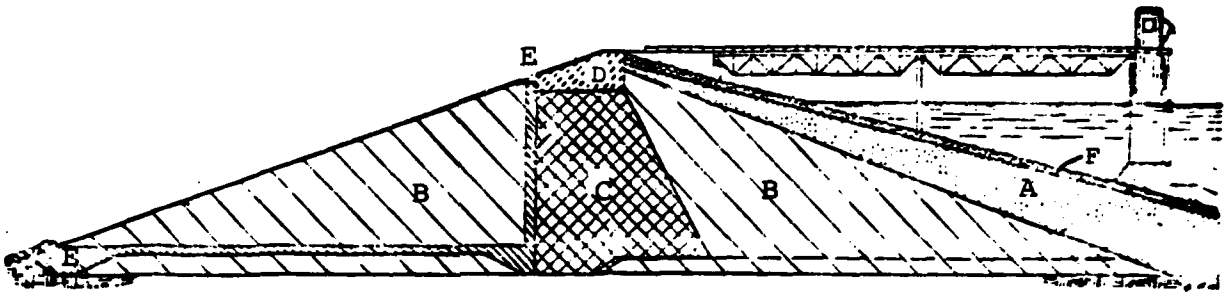
RUSSIAN RIVER PROJECT
MENDOCINO AND SONOMA COUNTIES, CALIFORNIA
RESERVOIR REGULATION MANUAL
COYOTE DAM

OUTLET WORKS
PLAN AND PROFILE

181 SH. SHTS. 23 JUNE 1959 DR. NO. 12
U. S. ARMY ENGINEER DIST., SAN FRANCISCO, C. OF E.
DRAWN: M. H. B.
TRACED: I. M. H.
CHECKED: W. R. T. APRIL 1959
FILE NO 61-47-12

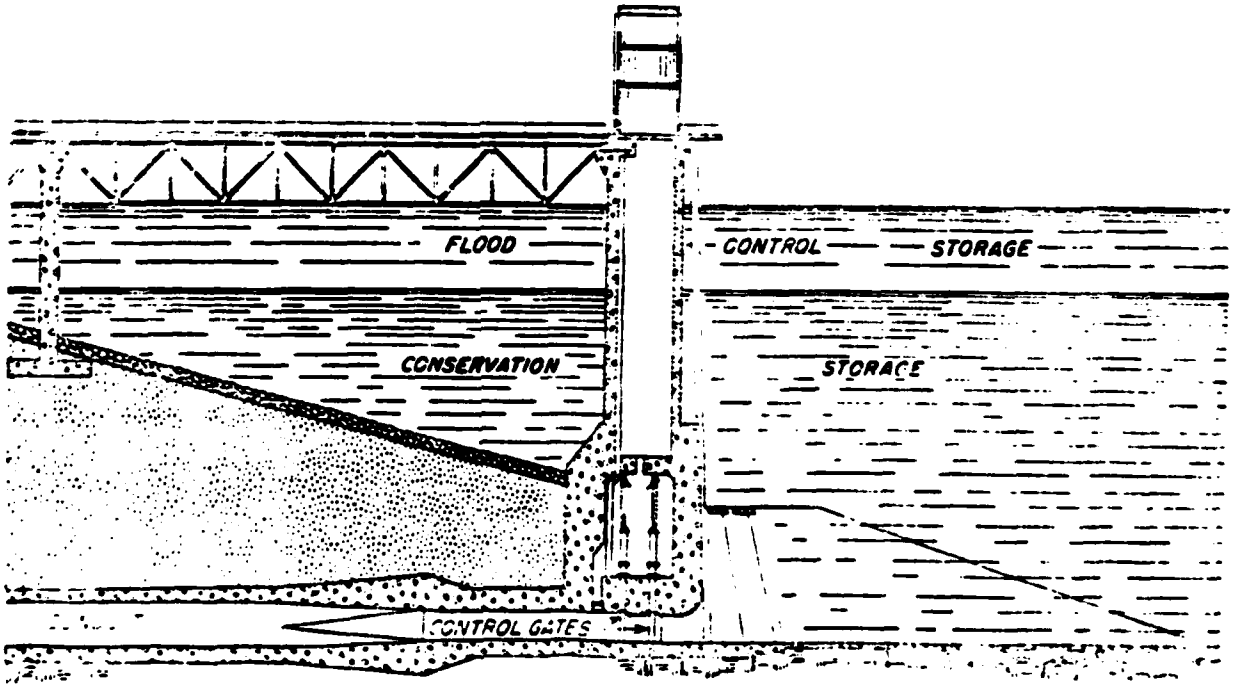
PLATE 11

FIG. A-12



SECTION THRU EARTHFILL DAM

The above cross section shows the distribution within the dam of the different types of materials used in its construction: (A) impervious clay-gravel material; (B) random earth fill; (C) impervious core; (D) select impervious material; (E) gravel and sand drain. The reservoir side of the dam is covered with reprap (F) to protect it against erosion.



SECTION THRU INTAKE TOWER

The above section shows the essential features of the intake tower which controls releases from the reservoir. The tower is reached by a bridge from the crest of the dam.

vertical drain was connected to a 5 foot thick horizontal drainage blanket of filter graded material placed on the downstream embankment foundation. Zone D, extension of the core material consisted of select impervious material from the borrow areas. The vertical drain and horizontal blanket would discharge seepage into a drainage trench with a perforated corrugated metal pipe and would provide interior seepage control. The vertical drain would have "self-healing" properties. The Zone D impervious material was placed to provide continuity of the core should the higher dam be built. The upstream slope of the dam is protected with 5 inches of filter material and riprap.

Construction Processes and Equipment

The embankment, excepting the Zone C impervious core, was constructed by compacting 8 inch layers of material, dampened to the proper moisture content, and rolled with four passes of a 50 ton rubber-tired roller pulled by a tractor. Zone B required a different method of construction. The procedure and special type of processing equipment necessary for it was determined by a test fill developed prior to the award of the contract. Highly consolidated clayey material from the spillway excavation areas was dumped and spread in 8 inch layers. The chunky material was then reduced to 6 inch maximum size by making two complete passes with sheepsfoot rollers. In this initial breakdown, any oversized chunks at the bottom of the layer were lifted by scarifying the full thickness of the layer. Moisture was applied to the material in the embankment by a 3,500 gallon

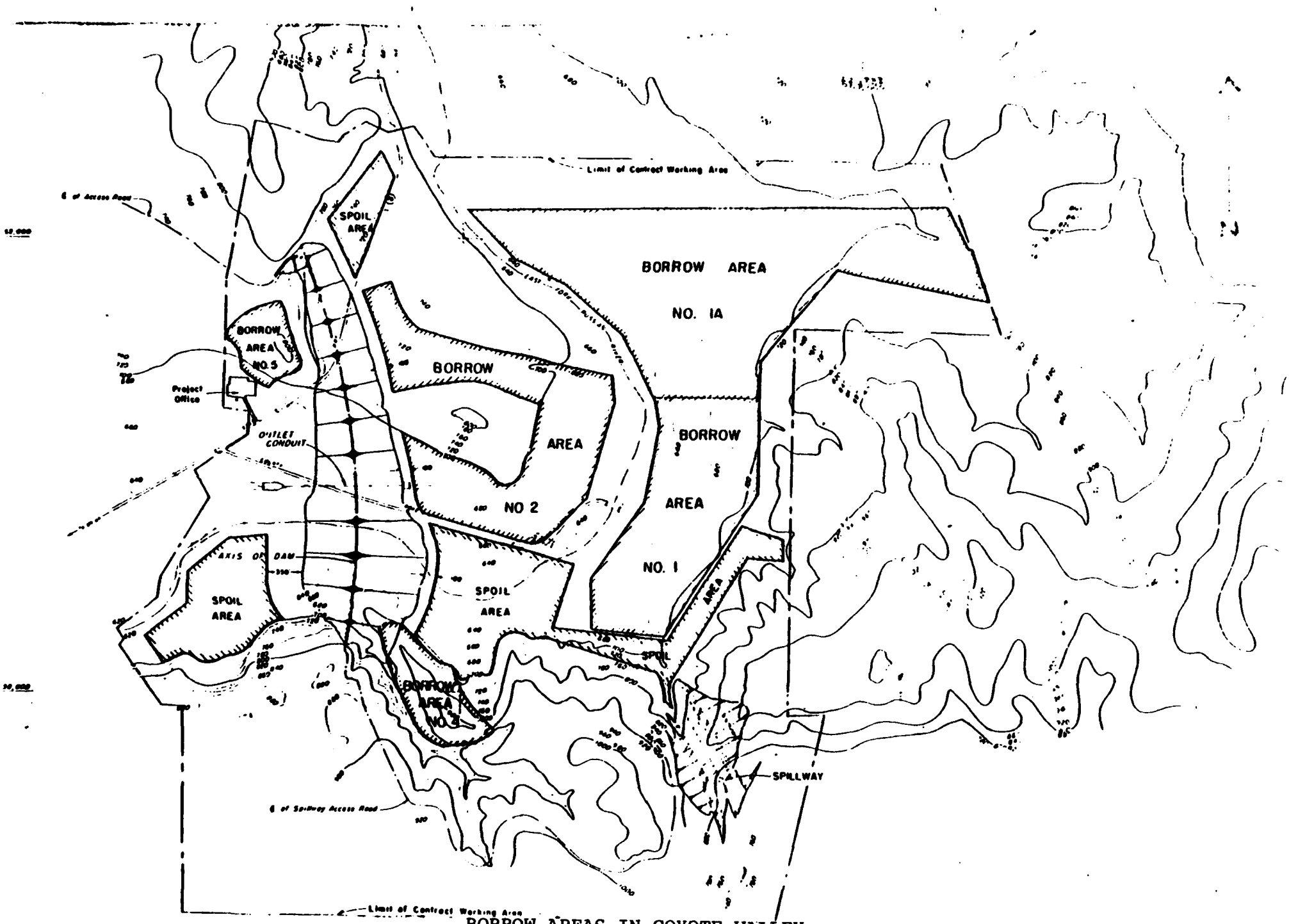
water truck, and was mixed with it for the full depth of the layer by making two passes with a "Rome" disc. Final compaction was achieved by making eight complete passes with the sheepsfoot rollers. Moisture was applied throughout the final compaction phase. All the embankment material were compacted to 95 percent of standard AASHD maximum density. The source of riprap was located 7 miles east of the dam site. One 225 Joy rotary drill, one D-8 tractor ("cat"), one 1½ yard shovel, and eight 10 yard dump trucks were used to excavate the material and haul it to the dam site.

Borrow areas 1, 1a, and 2, located in the reservoir area, were the source of Zones A and B material. When suitable material was exhausted in one area, equipment was moved to the next borrow site. The equipment used in the borrow area were one Euclid loader with two pull cats, one Sierra loader with one pull cat, nine 30 yard Southwest bottom dump wagons, and one motor grader. (See Plate 13)

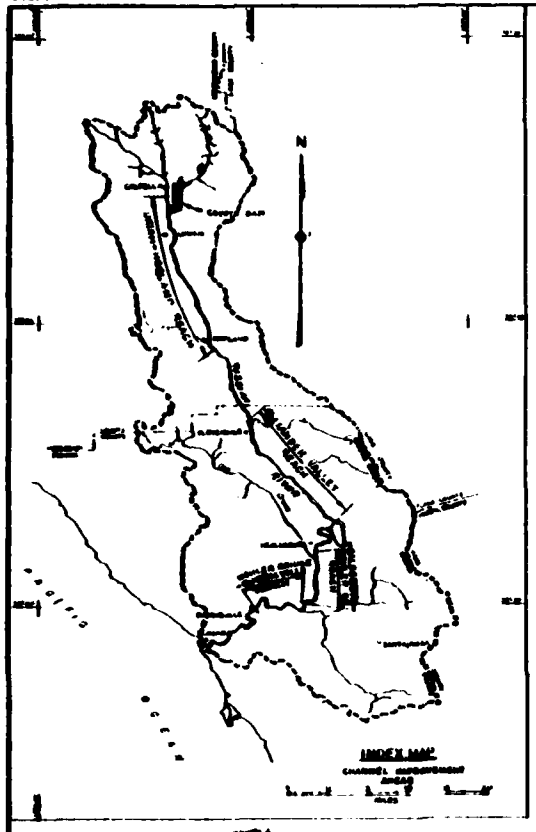
The filter material was obtained from the Russian River bed and was processed to obtain the required grades. Equipment consisted of one 2½" yard dragline and four 15 yard Euclid bottom dump trucks.

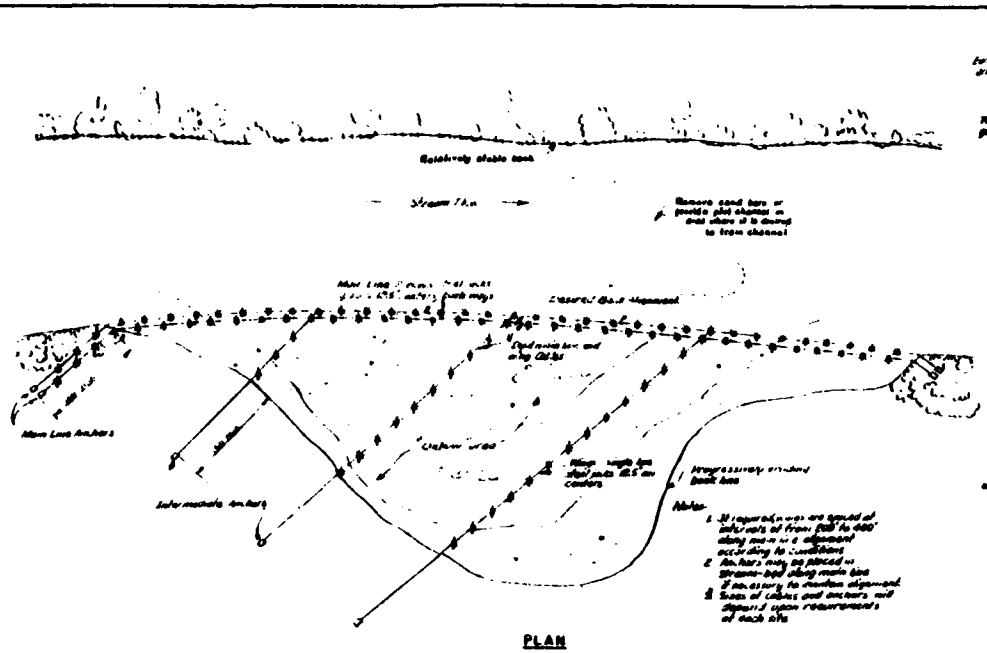
Construction Personnel

The construction of the dam was supervised by Charles F. Beatie, Project Engineer. Coyote was Beatie's eighth dam and one of his smaller projects, all but two of which were in California. Among his previous accomplishments were the $62 million

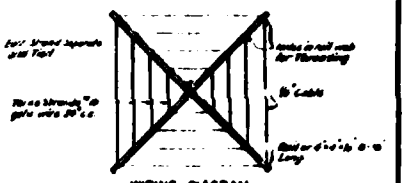


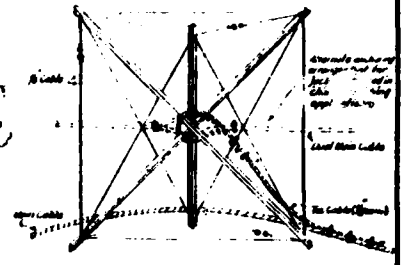
BORROW AREAS IN COYOTE VALLEY
PLATE 13

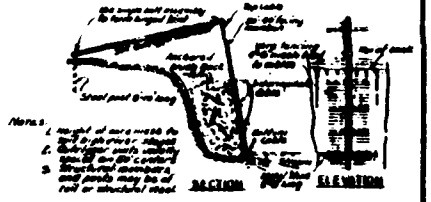


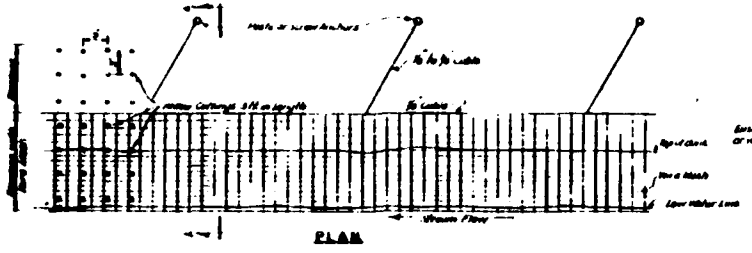


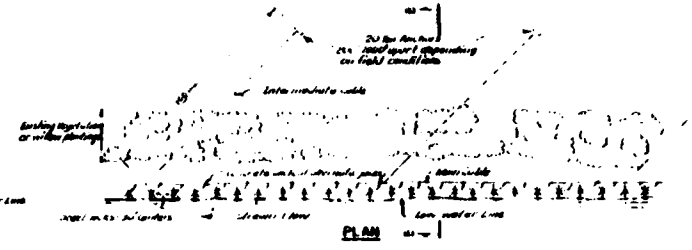
TYPICAL INSTALLATION OF STEEL JACKS FOR CHANNEL-TRAINING

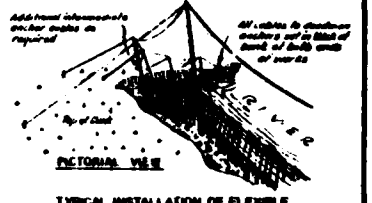




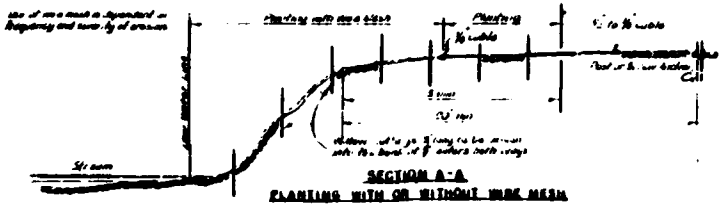




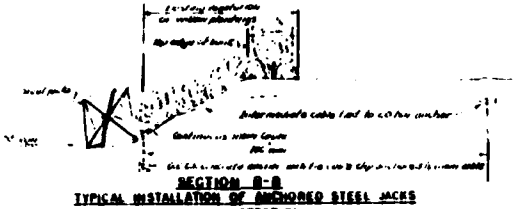




TYPICAL INSTALLATION OF FLEXIBLE FENCE AS BANK PROTECTION



PLANTING WITH OR WITHOUT WIRE MESH
TYPICAL INSTALLATION OF BANK PROTECTION WORKS



TYPICAL INSTALLATION OF ANCHORED STEEL JACKS AS BANK PROTECTION

RUSSIAN RIVER PROJECT
MENDOCINO AND SONOMA COUNTIES, CALIFORNIA
RESERVOIR REGULATION MANUAL
COYOTE DAM

CHANNEL IMPROVEMENTS

GENERAL PLAN AND DETAILS

IN 31 SHTS 23 JUNE 1958 DR. NO. 14
U.S. ARMY ENGINEER DIST., SAN FRANCISCO, C. OF E.
DRAWN: O. J.P.
TRACED: I. M. H.
CHECKED: W. R. T. APRIL 1959
FILE NO. 61-47-12

PLATE 14

FIG A-14

Folsom Dam on the American River and the Bonneville Dam on the Columbia which took ten years to build. Beatie studied engineering at Oregon State University and taught for ten years at the Oregon Institute of Technology in Portland. He had worked for the Corps on and off for 17 years prior to his involvement with Coyote Dam. He proved to be both a competent and a confident supervisor.

To aid the Project Engineer in inspecting the construction were an Assistant Project Engineer and six field inspectors. With these supervisory personnel, the Project Engineer was able to perform full inspections of the construction at all times. In addition, a field soil laboratory chief and five engineering aides tested soils on-site for gradation, moisture content, and density. A survey team with four members checked grade and slope controls and prepared beginning and final cross-sections. An officer engineer, with the assistance of a computer-draftsman and inspector figured quantities for payment and maintained "as-built" drawings.

Besides the Project Engineer, the key man organization included a Project Manager, a Business Manager, one excavation superintendent aided by a day-shift foreman and a night-shift foreman, and an assistant night-shift foreman.

To perform the work, two eight-hour shifts for the embankment construction and three eight-hour shifts for maintenance were employed. Approximately 250 local men were hired to work on the dam, primarily as laborers. A foreman supervised each of the five borrow areas and another the fill placement on the

embankment.

The maintenance section employed one master mechanic with a shift foreman for each one of the three shifts. Each shift contained eight mechanics and two welders. In addition, two lubrication foremen, one for each embankment shift, were utilized. To maintain the equipment, the maintenance personnel availed themselves of all the time the equipment was not in use, including lunch breaks and the time between shift changes. Also, throughout the shifts, two field maintenance trucks with radios and two mechanics each were on call for field repairs. Finally, a 500 hour check, taking two mechanics two days to accomlish, was performed on every piece of equipment on the job.

The large numbers of construction personnel caused some fear in Ukiah of problems with winter unemployment. However, during the first winter, employees were kept on to complete the concrete work which could be done in inclement weather. During the second winter, the concrete help was laid off but operators were hired in their place. The summer of 1957 was the peak season for local employment.

Construction Schedule

The plan of operation used by the contractor allowed the work to be completed well within the proscribed time. From the time of the award of the contract in May to the end of the first construction season in November, the contractor excavated for the outlet conduit and stilling basin; placed concrete for the conduit (thirty 32-feet monoliths with an inside diameter

of 12.5 feet) and the stilling basin; laced concrete for the intake tower (from elevation 632 feet m.s.l. to 688.5 feet m.s.l.); and excavated the inlet channel. The material from these excavations was used at the start of Zones A and B.

At the beginning of the second construction season in February, 1957, the placement of embankment material in Zones A and B was continued and Zone C was started. In mid-April, the East Fork of the Russian River was diverted form its original channel through the inlet channel and conduit. At the end of fiscal year 1957, the project was 44% complete. The slide gates and assemblies, begun in May 1956, were completed except for testing and installation. The construction of the dam and work was 50% complete. Land acquistion was completed and the relocation of Highway 20 was 25% complete.

Four miles of channel stablization was completed near Geyserville in February, 1957. Construction of channel works was then temporarily suspended until their effectiveness could be evaluated. Local farmers were disappointed in the Corps plans, resenting the several seasons needed to test what they termed a "trial and error" method. (See Plate 14)

The project was about 77% complete at the end of fiscal year 1958 (30 June 1958). Land acquisitions and the installations of the gates were essentially completed. Dam construction was considered 90% complete.

Other project features were:	Percentage Complete
Reservoir pool preparation	72
Relocation of Highway 20	86
Relocation of Utilities	95

Permanent Operating Equipment	66
Channel Stablization	8
Recreation Facilities	0
Engineering and Design	95

Rerouted Highway 20 was opened to traffic in June, 1958, and flow regulation of the reservoir was initiated in November.

April, 1959, saw the completion of the dam. The only work remaining was the construction of a fire prevention and access road to the northeast reservoir area.

The finished reservoir, Lake Mendocino, covers an area of 122,500 acre-feet of which 48,000 acre-feet are for flood control; 70,000 acre-feet for conservation; and 4,500 acre-feet for siltation. The gross pool covers 1,956 acres at an elevation of 764.8 feet m.s.l., although the top of the conservation pool is at 737.5 feet m.s.l.

Dedication of Coyote Dam - Lake Mendocino

The Dedication Day ceremonies for Lake Mendocino and Coyote Dam took place on Saturday, June 6, 1959. The event was sponsored by both Sonoma and Mendocino Counties. Besides the traditional dedication speeches, there was the Miss Lake Mendocino Talent and Beauty Contest, Lake Mendocino Art Show, special water events, a band concert, a boat parade and a dance. Nourishment was provided by a Box Luncheon Social and an Old Fashion Strawberry Festival. (See Plate 15)

The event was well advertised and invited visitors to stay the week-end and sample the area's recreational possibilities. (For the complete text of Congressman Clem Miller's speech at the dedication, see Appendix D.)

PROJECT HISTORY

Federal Participation . . . .

On August 28, 1937, Congress authorized the United States Army Engineer District in San Francisco to conduct a preliminary examination and survey of the Russian River. The object of this examination was to discover how the waters of this river could best be prevented from causing flood damages.

Not until after World War II were sufficient funds available to complete this task. On September 9, 1948, the San Francisco District Army Engineer submitted the recommendations which resulted in the work we see today; his report, with necessary additions and alterations, was submitted to the Congress of the United States on May 2, 1950. Construction was authorized in the Flood Control Act of May 17, 1950; appropriations for planning were made shortly thereafter and initial construction funds voted on February 10, 1956.

Bids were opened on June 5, 1956, and the Guy F. Atkinson Company of South San Francisco was the successful bidder for the dam at $7,467,750.10.

Local Cooperation . . . .

Sonoma and Mendocino Counties formed legally constituted flood control and water conservation districts in 1949 as an initial step toward meeting the requirements of local cooperation. On May 10, 1955, the citizens of Sonoma County authorized a bonded indebtedness of $5,598,000 to provide the funds required for the water conservation features. They additionally authorized $8,500,000 to provide a local distribution system.

On January 24, 1956, the voters of southern Mendocino County passed a $650,000 bond issue in support of their share of the cost.

EVENTS OF THE DAY

10:00 A.M.: Miss Lake Mendocino Contest

11:00 A.M.: Special Water Sports

12:00 Noon: Sixth Army Band Concert

1:00 P.M.: Cavalcade of Boats

2:00 P.M.: Dedication Ceremonies

SHO-DA-KAI Point

Speakers:

MR. JOSEPH HARTLEY
Chairman of the Mendocino County Board of Supervisors

MR. LEIGH SHOEMAKER
Chairman of the Sonoma County Board of Supervisors

MR. DAN LONDON
City and County of San Francisco

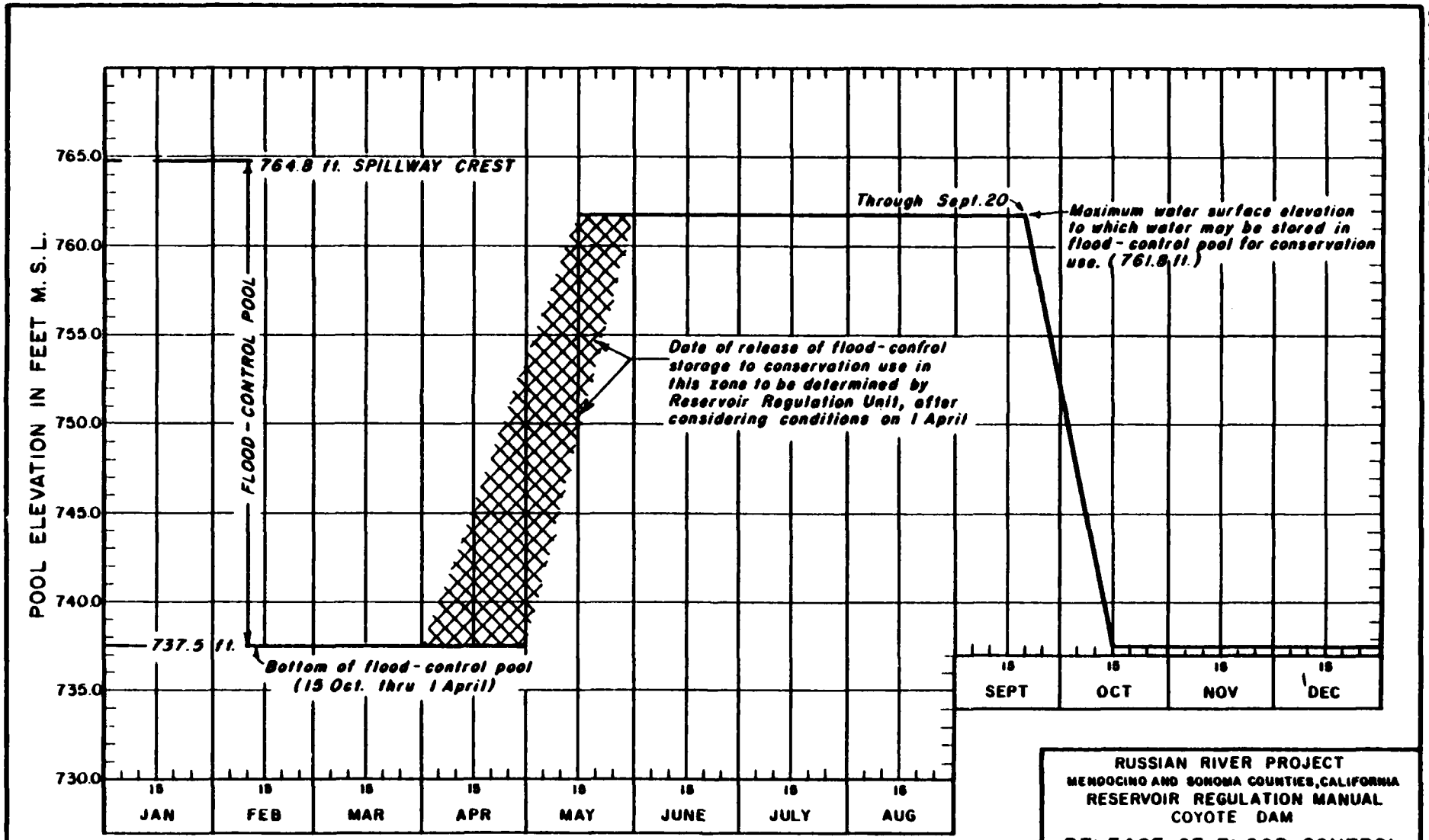
MR. RALPH BRODY
Special Water Counsel to the Governor of the State of California

BRIGADIER GENERAL ROBERT G. MacDONNELL
Division Engineer, U.S. Army Engineer Division, South Pacific

REPRESENTATIVE CLEMENT W. MILLER
First U.S. Congressional District, State of California, Principal Speaker

3:00 P.M.: Strawberry Festival

9:00 P.M.: Lake Mendocino Ship Ahoy Dance



CORPS OF ENGINEERS

RUSSIAN RIVER PROJECT
MENDOCINO AND SONOMA COUNTIES, CALIFORNIA
RESERVOIR REGULATION MANUAL
COYOTE DAM

RELEASE OF FLOOD CONTROL STORAGE FOR CONSERVATION

IN 31 SHTS. 14 JULY 1958 SH. NO. 26
U. S. ARMY ENGINEER DIST., SAN FRANCISCO, C. OF E.
DRAWN: D. G.
TRACED: I. M. H.
CHECKED: W. R. T. APRIL 1959
FILE NO. 61-47-12

U. S. ARMY

PLATE 16

FIG. B-4

Costs

By the end of the fiscal year ending June 30, 1960, total costs for constructing the dam were estimated to be $17,450,000. This included $130,000 in pre-authorization studies and post-authorization land acquisition, as well as road and other relocation costs. Channel improvements downstream of the dam on the East Fork of the Russain River and on the Russian River and several tributaries were then estimated to cost an additional $2,400,000. Recreation facilities at Lake Mendocino were funded and constructed in later years. The total dam and channel costs of $19,850,000 was shared by the Federal Government ($14,252,000) and the local sponsors, the Sonoma County Flood Control and Water Conservation District ($4,965,000), and the Mendocino County Russian River Flood Control and Water Conservation District ($633,000). (U.S. Army Corps of Engineers, 1959, 1960 Annual Reports.)

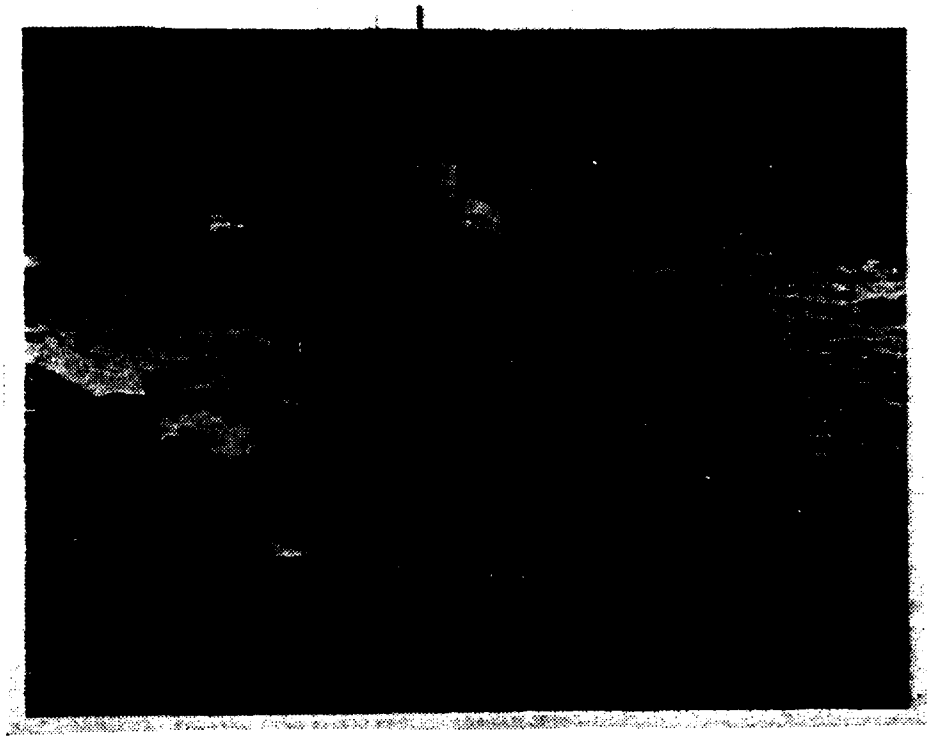
Flood Control

The operation of Coyote Dam was designed primarily to reduce downstream flood peak discharges. The dam makes such reductions possible by holding inflowing water and preventing its release downstream. The reservoir's size provides the necessary flood control storage space. (See Plate 16) The regulation of the flood control storage constitutes Coyote Dam's most important

function during the flood season from November 1 to April 1 and was planned to reduce flood flows about one-half at the junction of the East Fork with the main stream, about one-third near Hopland and progressively less downstream as inflows from tributaries increase main branch flows. The planned flood flow reduction at Guerneville was about seven percent.

In flood season, the entire flood control storage space is kept available for use when needed. During floods, releases are made only when they do not contribute to flood peaks downstream. (See Plate 17) Releases are maintained at or below 2,000 cfs when the U.S. Weather Bureau forecasts indicate significant rainfall. The outlet works are closed completely when the inflow rises above 2,000 cfs. Dam tenders go on 24 hour duty when intense rainfall is expected.

The flood control operation of Coyote Dam is dependent on information additional to that available on site. Stream gaging facilities are set-up throughout the Russian River basin and all contribute significant operating data. A recording pool gage is located in the outlet tower and records pool levels between elevations 655 and maximum pool 779.9. Wire-reporting (telemetering) and recording stream-gaging stations are located on the East Fork below Cold Creek above the dam; on outlet channel below the dam; and on the Russian River near Hopland. In addition, five other stations collect flood data and appraise project benefits. These are on Russian River near Cloverdale, Healdsburg, and Guerneville, on Dry Creek near Cloverdale, Dry Creek near Geyserville and on the Laguna de Santa Rosa near Graton. Coyote



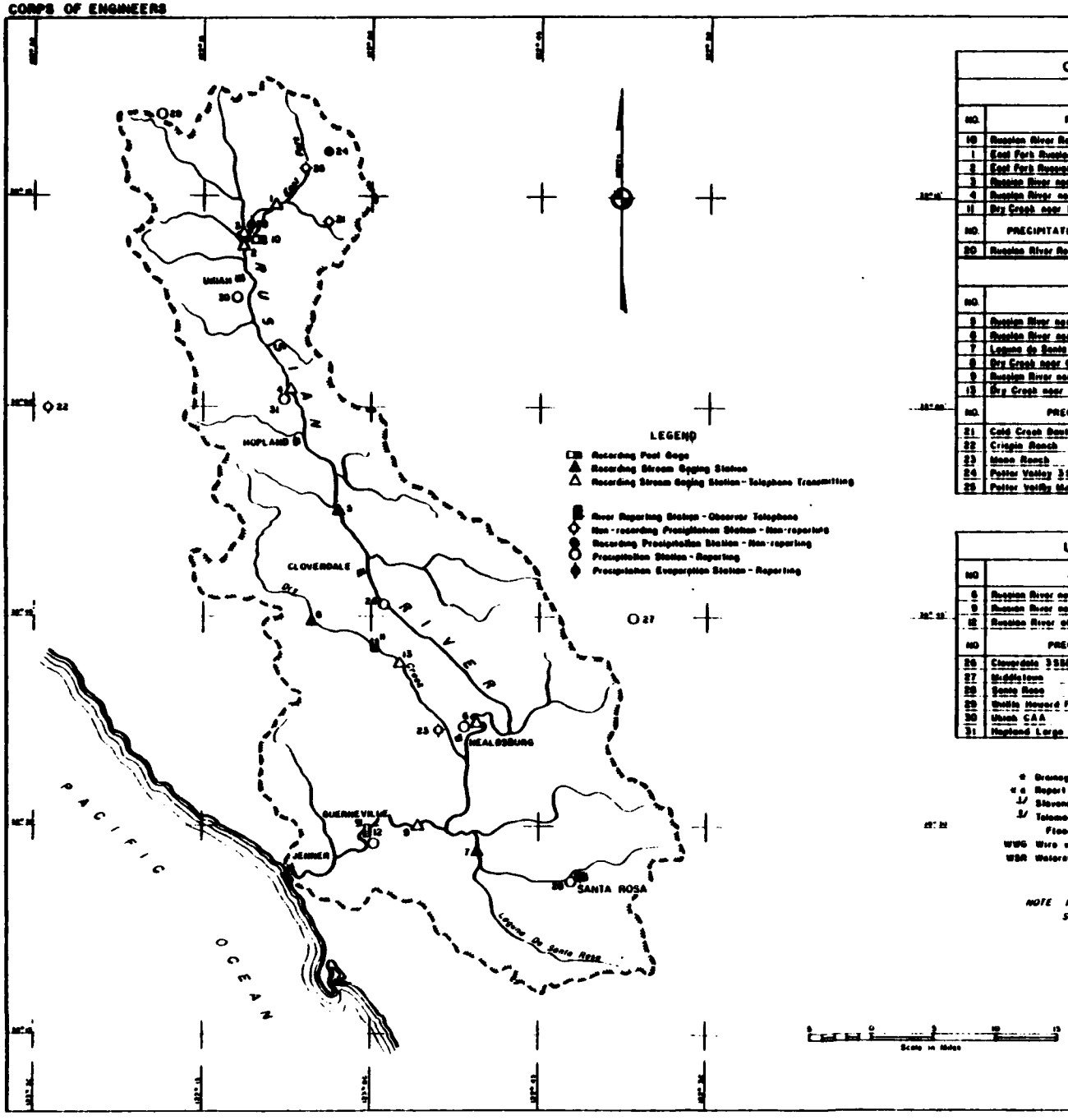
Flood level discharge from Coyote Dam , 1964

Flood level discharge over the banks of the East Fork channel below Coyote Dam, 1964.

PLATE 17

CORPS OF ENGINEERS

U.S. ARMY



CORPS OF ENGINEERS HYDROLOGIC NETWORK

REPORTING STATIONS

NO.	RIVER STATIONS	TYPE OF GAGE	DRAINAGE AREA (Sq. Miles)	METHOD OF COMMUNICATION
10	Russian River Reservoir Pool Gage	WSR	100	Commander - Radio or Telephone
1	East Fork Russian River near Calpella	WSR	93	Telephone Transmitting [1/]
2	East Fork Russian River below Russian River Reservoir	WSR	109	Telephone Transmitting [1/]
3	Russian River near Ukiah	WSR	194	Telephone Transmitting [1/]
4	Russian River near Hopland	WSR	348	Telephone Transmitting [1/]
11	Dry Creek near Hamilton School	Staff	131	Observer - Telephone
NO.	PRECIPITATION-EVAPORATION STATION			
20	Russian River Reservoir	N-R		

NON-REPORTING STATIONS

NO.	STREAM GAGING	TYPE OF GAGE	DRAINAGE AREA (Sq. Miles)	DATE INSTALLED
5	Russian River near Cloverdale	WSR	502	1941
6	Russian River near Healdsburg	WSR	793	1939
7	Laguna de Santa Rosa near Graton	WSR	281*	1941
8	Dry Creek near Cloverdale	WSR	88	1941
9	Russian River near Guerneville	WSR	1342	1884
12	Dry Creek near Geyserville	WSR		1959
NO.	PRECIPITATION STATIONS			
21	Cold Creek Dam	N		
22	Crispin Ranch	N		
23	Moon Ranch	N		
24	Potter Valley 3SE	R		
25	Potter Valley Magruder	N		

U.S. WEATHER BUREAU REPORTING NETWORK

NO	RIVER STATIONS	TYPE OF GAGE	DRAINAGE AREA (Sq. Miles)	METHOD OF COMMUNICATION
6	Russian River near Healdsburg [*] [#]	WSR	793	Telephone Transmitting
9	Russian River near Guerneville [*] [#]	WSR	1342	Telephone Transmitting [2/]
10	Russian River at Guerneville	WWG	1349	Observer - Telegraph
NO	PRECIPITATION STATIONS			
26	Cloverdale 3SSE	N		Observer - Telegraph
27	Middletown	N		Observer - Telegraph
28	Santa Rosa	N		Observer - Telegraph
29	Shelter Howard Forest	R		Observer - Telegraph
30	Ukiah CAA	N		Observer - Teletype
31	Hopland Large	N		Observer - Telegraph

LEGEND

* Drainage area above mouth of the Laguna

Report precipitation in addition to river stages

1/ Stevens Telemark instrument - signals via commercial telephone

2/ Telemark installed and maintained in cooperation with Sonoma County Flood Control and Water Conservation District

WWG Wire weight gage — N Non-recording

WSR Waterstage recorder — R Recording

NOTE In addition to the precipitation stations listed above there are 56 U S Weather Bureau Stations and 15 private stations in or near the basin

Scale in Miles

RUSSIAN RIVER PROJECT
MENDOCINO AND SONOMA COUNTIES, CALIFORNIA
RESERVOIR REGULATION MANUAL
COYOTE DAM

HYDROLOGIC STATIONS

61-47-12

FIG A-16

PLATE 18

Dam also uses information from the flood-warning network established by the U.S. Weather Bureau which consists of additional wire-reporting stations, river observers and rainfall observers. (See Plate 18)

Coyote Dam is operated and maintained under the jurisdiction of the District Engineer, U.S.Army Engineer District, San Francisco. The Chief, Operations Branch is responsible for physical operation and maintenance. The District's organization and reservoir regulation responsibilities was somewhat different when the dam was initially put into operation. (See Plate 19)

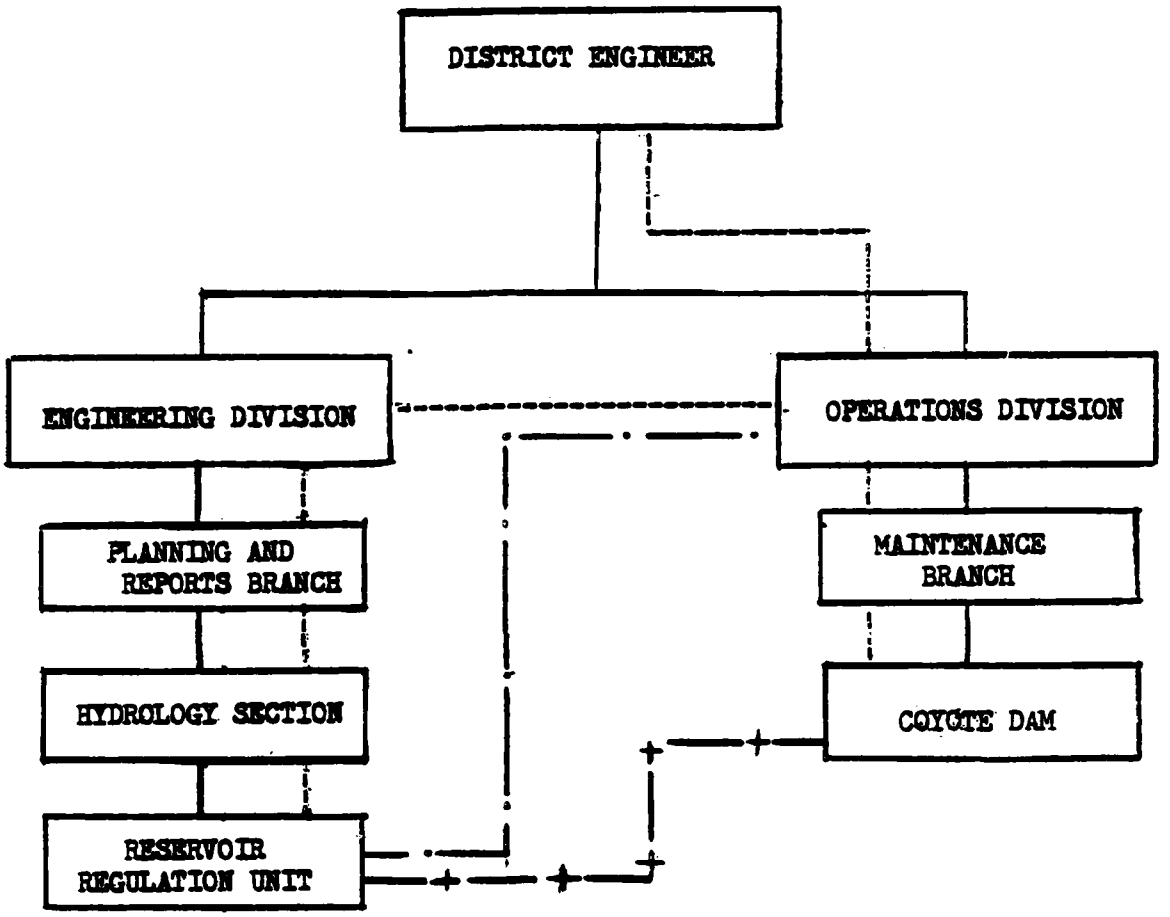
The most severe floods recorded in the San Francisco Bay Sub-region occurred in December 1955 and December 1964. The Russian River Basin sustained unprecedented damage from the latter flood despite the protection offered by Coyote Dam. The 1964 flood inundated 33,600 acres in the Basin, resulting in damages of nearly $17 million, approximately 80 percent of which were agricultural, residential and commercial losses. Included in the total damages were flood fighting and cleanup costs of approximately $1 million each for the December 1955 and December 1964 floods.

According to the State of California Resource Agency Report on Flood Damage 1964-65,

> ....under 1965 project and economic conditions, the flood control system would have prevented about $5 million in damages from the December 1955 flood and over $3 million in damages from the December 1964 flood. Most of this damage reduction would be credited to the Coyote Valley

Reservoir in the Russian River Basin. During the floods of 1958, Coyote Valley Reservoir, while under construction, reduced flood damages by $270,000. It was estimated that had the project been in full operation, a reduction of $530,000 would have been realized...

(State of California, The Resource Agency 1966:SF4)



— + — Normal and Emergency Reservoir Regulation Instruction and Communication Channels.

——— Normal Command and Communication Channels

- - - - - Flood Emergency Command and Communication Channels

·—·—· Normal and Emergency Reservoir Regulation Advisory Channels.

RUSSIAN RIVER
PROJECT, CALIFORNIA
COYOTE DAM

SAN FRANCISCO DISTRICT
NORMAL AND FLOOD EMERGENCY
COMMAND AND COMMUNICATION
CHANNELS

1958

PLATE 19

FIGURE B-5

CHAPTER FIVE

RECREATIONAL DEVELOPMENT OF THE RUSSIAN RIVER RESERVOIR

> The Board of Supervisors of Mendocino County and various civil organizations have proposed that the reservoir be officially named "Lake Mendocino". This desirable name change may be accomplished only by act of Congress. (Campbell, James M. 1958)

As early as the winter of 1958-59, with Lake Mendocino filling for the first time, the Corps noted that the reservoir was becoming a substantial scenic attraction. Local residents were using the overlook point near the dam in sufficient numbers to create congestion. In part, to provide adequate control of this kind of use of the lake facility, the Corps recommended speedy development of its recreational potential so as to promote the optimum and safe use of the reservoir by the public. Toward this objective the Corps submitted its Master Plan for Public Recreation Development of the project area in January 1959. (For update, see Lake Mendocino Master Plan (updated), U.S.Army Corps of Engineers, January 1977.)

Development Plans

In assessing the area's potential for recreational development the Corps noted that the reservoir lay in a region already noted for tourism. By comparing the geographical and demographic context of Lake Mendocino to that of reservoirs in similar situations elsewhere in the United States, the Corps estimated that in its first year of operation, 1959, a quarter

of a million people would visit its shores. By 1965, 1,500,000 annual visitor recreation days were projected.

The climate of the region is mild enough that year-round tourist activity was anticipated, with a natural emphasis on the summer season.

It was anticipated that the pattern of recreational activities would include fishing, camping, hiking, waterskiing, swimming, picnicking, boating and general sight-seeing. Acknowledging that several of these activities were conflicting, the Corps urged that management be alert to regulate the lake so that those activities gaining greatest public response be accommodated.

The original Master Plan described the Corps' policy to encourage recreational development by local interests (p.9). Specificially, the plan proposed implementation of a recreational program to be developed and operated by the County of Mendocino under license from the Secretary of the Army. It contemplated the direct provision of facilities by the county, as well as the licensing of concessionaires, both individuals and organizations, to provide accomodations and services to the public. By policy, the lake was to be operated so that the public had access to water areas without charge. (For Corps regulations, see Federal Register, October 21, 1959 Title 36 - Parks, Forests, and Memorials. Chap III, Part 311, Public Use of Certain Reservoir Areas)

The Mendocino County Board of Supervisors had accepted jurisdiction over Coyote Valley Recreation area by Resolution

No. 3095, adopted on April 8, 1958. The Board's own master plan for recreational development was put together by a planning consultant hired for the purpose, and submitted in December 1958. (See Campbell, James M. 1958.)

The County's plan dealt in great detail with facilities and services to be distributed around the entire perimeter of the lake in seven "development areas." It included such ambitious projects as a lodge and rental cottages; restaurant and sporting-goods shop; riding stables, trailer parks, and boat docks with 6 launching ramps. The County, however, never intended to assume the entire financial burden of such development. Various aspects of this large and complex project were to be assumed by the State Wildlife Conservation Board, the Corps of Engineers, the State Department of Fish and Game, and by private concessionaires.

In short, the County had conceived a comprehensive plan to provide access to and multiple use of Lake Mendocino as a new and major recreational facility in the Redwood Empire.

Implementation

The first decade of recreational development at Lake Mendocino proved difficult. The Corps initially foresaw costs of $350,000 for their share of the effort which included $300,000 for a fire-fighting and access road in the northeast corner of the reservoir area, and a boat ramp with parking facilities near the dam's north abutment. Also, $120,000 more was spent on restrooms, drinking fountains, picnicking units, and an overlook. These facilities were located near the dam.

On June 12, 1959, the Corps granted a free license to Mendocino County for a term of 25 years, commencing July 1, 1959 and ending June 30, 1984, to administer, develop and maintain for public park and recreation purposes approximately 2,991.23 acres of land and water at the Russian River Reservoir. With monies from the State Wildlife Conservation Board, the County constructed additional facilities consisting principally of a boat-launching ramp, restoom and parking at the north end of the reservoir.

In January 1960, the County invited private interests to submit proposals for the development of concessions at the lake. A group of local businessmen operating as Mendoyoma, Incorporated, submitted a plan which resulted in a Concession Agreement, approved May 23, 1960.

Mendoyoma undertook the construction and operation of parking lots, a floating dock, fueling facilities, a small retail store, and a septic system, investing an estimated $150,000. Mendoyoma also negotiated a sub-concession agreement with M. E. Dibble for the operation of a private campground along the north shore near the boat launching ramp. As part of its agreement with the County, the concessionaire and sub-concessionaire were guaranteed the "right" to operate these facilities at a fair return in capital, the County receiving three percent of grosses on all sales. None of these agreements, however, were cleared with the Corps as required by the original lease.

Conflict developed. Exactly a year after the Concession Agreement was approved, Mendoyoma charged the Mendocino County

Board of Supervisors with violating the agreement by building a parking lot for which no fees would be collected. This interfered with Mendoyoma's plans for building a parking lot on the same site and charging for its use. The private developers claimed unfair competition.

The concessionaires' plans for charging fees for recreational use of the area, however, were in direct conflict with Corps of Engineers regulations which required free public access to both the water's edge and the basic facilities for picnicking, parking and swimming.

Local residents began to express their concern over the recreational development at Lake Mendocino. A group of Ukiah area businessmen, calling themselves The Citizen's Committee, Recreational Development of Lake Mendocino, addressed both the Corps and Congressional representatives with charges that the County had failed to adequately develop the recreational potential of the reservoir, to the detriment of their business and the public interest. The closing of some over-night accommodations due to improper sanitation had significant negative impact on anticipated business associated with tourism in the area, they claimed. They urgently requested that the Corps take over the control and supervision of recreational facilities at the Lake.

Subsequent inspections revealed that proper permits pertaining to construction, health and safety had not been obtained from the State of California Department of Housing by the concessionaires. Sanitary facilities were in poor repair and illegal structures had been erected. Further, it was observed

that the sub-concessionaire, in violation of the Federal law under which he was authorized to operate, was charging user fees for admission to the area, for parking, and for use of beaches and picnic facilities.

Mendocino County, unable to reconcile concessionaire profit motives with federal land use requirements, terminated its contractual relations with Mendoyoma, Inc. The County was unable to continue recreational development on its own due to its limited financial resources, further strained by concessionaire lawsuits claiming reimbursement for the construction of improvements.

On the basis of inspection reports and in the face of citizen complaints, the Corps terminated the license between the United States and the County of Mendocino covering the recreation area at Lake Mendocino. In 1963, the last side of the lake was returned to the Corps. On September 12, 1966, the license was revoked in toto.

Accomplishments of the 1970's

From 1966 to the present, the Corps has had full responsibility and jurisdiction for the design and implementation of a recreational program at Lake Mendocino. The work progressed steadily and even in the years of severe drought, 1975-77, when the lake was virtually emptied, the upgrading of existing

facilities continued. This work has resulted in the multi-faceted program presently visible year-round, and has had significant economic impact in a county traditionally plagued by low employment by encouraging tourism and employing local residents.

Today the Corps operates over 5,000 acres of recreational facilities, including 1,700 acres of lake surface and 15 miles of shoreline. Public utilization is concentrated on the west, north and northeast shores of the reservoir, with some additional campsites accessible only by boat.

There are two boat ramps offering 12 launching lanes. A marina is situated at the north end of the lake, providing 54 floating storage spaces, a snack-bar and fueling facilities. Three sites at the northwest end have been designated as day-use areas. These include lawn areas, a children's playground, shelters for small or large group picnics, including permanent barbeque pits. Adjacent to the beach which has been reserved for swimming are 3 bath houses which include changing rooms and showers.

Five other sites have been designated as camping areas. One is free, another is the "primitive" area accessible only by boat. The others are available at a user-fee charge which is set at the start of each season. These are assigned on a first-come, first-serve basis, though sites suitable for group use may be reserved in advance.

Further south, by way of the approach nearest the dam, is the other day-use area which includes swimming, playground

and group picnic facilities.

A very popular area on a large flat extending into the lake's northeast shore is the "Mesa". Here a two acre lawn is surrounded with running water, sanitary facilities, picnic tables, permanent barbeque pits, a children's playground, group and individual shelters, and more recently a "Vita-course," which incorporates exercise stations into a jogging course.

Another Vita-course has been installed on the dam, near the "Overlook". The Overlook constitutes the trailhead of a 100-yard nature trail. This is a self-conducted interpretive tour which utilizes a brochure to inform the visitor about native plants in the area. The Overlook is also the south terminus of a 5 kilometer hiking trail which winds along the entire length of the lake's west shore as well as the site of picnic shelters.

A discussion of recreational development at Lake Mendocino cannot be limited to descriptions of physical improvements. The Corps has added another and important dimension to its public service by instituting a full range of supervised activities throughout the calendar year.

Twice each week during the summer are campfire programs which provide slide shows, guest speakers, and demonstrations emphasizing environmental themes. Guided tours of lake facilities and nature trails are available as well as a Career Day designed especially for local high school students. They are bike rodeos and scouting activities, and demonstrations of parachuting, hang-gliding, and of water skiing by the Golden Gate

Ski Club. Special observances mark Senior Native American Day. Lake facilities are annually used as a staging area for a fifty mile endurance horse ride.

All activities take place with fullest attention to matters of public safety, both on the water and the shore. A safety boat patrol is provided in cooperation with the Coast Guard and the Sheriff's Department. Safety classes are conducted Hunting and fishing are subject to all appropriate State regulations, with year-round fishing available for five species, including striped bass and catfish.

The interpretive trails have been recent innovations, and will soon be augmented by free booklets which inform visitors about local mushrooms, fish, wildflowers, birds, insects, wildlife, trees and plants.

Interpretive Cultural Center

A plan for an Interpretive Cultural Center at Lake Mendocino was developed by the Corps in conjunction with the Mendo-Lake `omo Council, a Native-American organization, to promote American Indian heritage and culture and to provide visitor information on the Corps and Coyote Dam. In 1975, an architectural firm was hired to develop concepts for the building and after review by both the Corps and the Council, their plan was accepted.

The architectural design of the center follows the form of the traditional Pomo roundhouse. The exterior of the building will be slightly recessed into the hillside giving the impression that the structure is underground, as was the

case with traditional roundhouses. Its interior will also reflect the roundhouse style by stressing radiating columns and beams of wood.

The Interpretive Cultural Center will be the primary site at Lake Mendocino for visitor information and education. It will provide office space for Corps personnel at the lake as well as for officials of the Mendo-Lake Pomo Council. An archaeological and ethno-historical overview of the area prior to inundation will be developed for public interpretation and the history of Coyote Dam and information pertaining to the dam structure itself will be presented. The Center will also house Native-American displays and will serve as a Pomo cultural center through the presentation of classes and cultural events.

Funding of the project is being reviewed at the present time and the start of construction is planned for spring of 1979.

Corps Sponsored Studies

The Corps has sponsored a number of on-site studies at Lake Mendocino to further the understanding and appreciation of the area.

Because of the heavy recreational use at this comparatively small reservoir, a research program was developed in the late 1960's to evaluate the most suitable plant life for the area's conditions. The project was jointly conducted by the Corps of Engineers, U.S. Forest Service Experiment Station, and the Department of Landscape Horticulture of the University of Calif-

ornia at Davis.

About 50 species of plants, trees and shrubs were planted on the northwest shore of the lake to find out which offered the best solutions to problems of heavy use and to test various combinations of mulch and fertilizer. Fourteen species of trees were planted so as to be flooded at high water levels to test their resistance to environmental changes; those best able to survive were then used in areas subject to pool fluctuations.

In addition to these studies, the Corps has maintained its own plant starting area and is continually evaluating and upgrading its stock to beautify the lake side and camping areas.

During 1975-76, the Corps sponsored a major study of the historical cultural resources of the project area. This in-depth research identified a wide variety of historical information and features associated with the area and prepared documentation suitable for presentation in an interpretive program. These materials will form a major base for themes and displays at the Interpretive Center. (See Peri, D. W. and S. M. Patterson, Eds. 1976, unpublished manuscript.)

In 1976-77 and 1977-78, in cooperation with the National Park Service, studies of the effects of fresh water inundation on cultural materials were made. A severe drought caused the level of the lake to drop significantly and expose cultural and historical archaeological sites that had been under water for almost twenty years. Examination of the sites and associated artifacts provided new information on the condition of inundated

archaeological materials and, as a result, innovative methods of site conservation were developed to be applied at other dam projects.

The present study, the history of the planning and construction of Coyote Dam, provides data and sources of materials to enhance the planned interpretive program at the new Center.

Present Administrative Center

The newly renovated Administrative and Visitor's Center, presently located on Lake Mendocino Drive, already offers topical exhibits, free maps and other printed materials which inform the public as to Corps facilities, activities and environmental objectives. It also houses staff responsible for administration of the site, dam tending, recreational development and maintenance. Workshops and supplies are located here as well.

In all, it is a uniquely varied recreational program which draws visitors to Lake Mendocino. The severe drought and dwindling lake pool curtailed public use in 1975-1977 especially with regard to water-related activities. Through this period, the Corps staff at the lake maintained a vigorous land-use recreational program so that in 1978, with the return of the reservoir to maximum pool, Lake Mendocino was able to serve more than one million seven hundred thousand visitor recreation days.

CHAPTER SIX

RECOMMENDATIONS FOR INTERPRETATION

> Interpret: to explain or tell the meaning of; present in understandable terms.
> (Woolf, 1974, Websters New Collegiate Dictionary)

The interpretation of the history of Coyote Dam should leave a casual visitor with an understanding of the basis for such a project; a knowledge of the processes involved in its formulation; and a conceptualization of its actual form and workings. These ends can be best developed around selected themes dealing with the project's foundations, background, and present condition. Three major themes and an optional fourth are suggested. The major themes generally follow the sequence of this work and are: 1) The Russian River; Its Character and Uses; 2) The Coyote Valley Project, Background and Planning; and 3) Coyote Dam-Lake Mendocino. The fourth theme concerns the project's recreational facilites and development.

THEME ONE - The Russian River; Its Character and Uses

A. Objectives

1) to gain a knowledge of the Russian River both before and after the construction of Coyote Dam.

   a) River's course, tributaries, size, shape, flow, use.
   b) Relationship to Eel River
   c) Basin geology, population, usage, economics
   d) Changes due to Coyote Dam

2) to understand problems connected with the Russian River

a) drought, its effect on economics, wildlife
b) floods - how they develop
c) floods - what they do
d) floods - how they are controlled

B. Suggested Interpretive Materials

1) Historical references to river

a) explorers' diaries
b) Native-American oral histories
c) written records

2) Large map of river illustrating tributaries, river miles, towns, etc. and Eel River (S. Fork)

3) Large photographs of typical scenic views along the river, e.g. redwoods, rapids, gorges, valleys, orchards, vineyards, etc.

4) Relief map of the Russian River basin

5) Diagrams illustrating geological changes

6) Diagrams of river bed slopes and channel capacities

7) Flood model (3-dimensional) with visual explanation of why and how flooding occurs

8) Photographs of floods and flood damage in combination with local accounts

9) Photographs and actual examples (like Jackstraws) of flood control works used on Russian River

10) Photographs and examples of historic diversion and irrigation works (i.e., Cleveland Mill Flume - actual pump model)

11) Land use map

12) Display model and accompanying explanation of Scott and Van Arsdale dams, including their history and development, and diversion of Eel River water through Potter Valley powerhouse, irrigation system and return to Russian River

C. Location of Interpretive Materials

U.S. Army Corps of Engineers - District and Project Offices
U.S. Bureau of Reclamation
U.S. Department of Agricultural, Soil Survey - Sonoma and Mendocino Counties
State of California, Department of Water Resources
Mendocino County Agricultural Commissioner
Mendocino County Farm Advisor
Mendocino and Sonoma Flood Control and Water Conservation Districts
Mendocino County Historical Society
Mendo-Lake Pomo Council
Potter Valley Irrigation District
Local residents
Pacific Gas and Electric Company, San Francisco

THEME TWO - The Coyote Valley Project, Background and Planning

A. Objectives

1) to become familiar with the background of water use and development in California

2) to understand the Corps of Engineer's planning process in general

3) to review the specific planning steps for Coyote Dam and the Russian River basin

4) to be aware of local participation, issues and conflicts as well as their resolutions

a) explanation of riparian and appropriative rights

B. Suggested Interpretive Materials

1) Brief history and explanation of California water development

2) Diagram of general Corps planning process with accompanying examples of Coyote Valley planning

3) Explanation of water rights

4) Explanation of local water rights (combined with Eel River diversion) - Diagram showing division of water

5) Explanation of local participation (requirements, bond issues, costs, concerns)

C. Location of Materials

Congessional Records
U.S. Army Corps of Engineers, District Office
State of California Department of Water Resources
Russian River Flood Control District Records
Santa Rosa Press Democrat (microfilm)
Ukiah Daily Journal (microfilm), Mendocino County Library
Sonoma County Courthouse (Board of Supervisors Proceedings)
Mendocino County Courthouse (" " " ")
California State Chamber of Commerce
Sonoma County Chamber of Commerce
Mendocino County Chamber of Commerce
Local residents

THEME THREE - Coyote Dam-Lake Mendocino

A. Objectives

1) to understand what Coyote Dam is

   a) form
   b) appurtenant works
   c) statistics

2) to understand what Coyote Dam does

   a) normal operation
   b) flood control operation

3) to gain an awareness of how Coyote Dam was constructed

   a) materials
   b) techniques
   c) equipment
   d) time and costs

4) to understand the effect of Coyote Dam

   a) Lake Mendocino - reservoir facts

B. Suggested Interpretive Materials

1) Reproduction of "Ground-breaking" program, collage with newspaper headlines and articles

2) Large diagram of dam with relevant data

3) Diagram of spillway

4) Diagram of zones

5) Photographs corresponding to diagrams

6) Samples of types of soils used in construction of dam

7) Relief model of dam interior and intake tower

8) Working model of dam works - inflow and discharge (including spillway operation)

9) Photographs of Coyote Valley prior to inundation showing dam, spillway and inflow channel sites

10) Photographs of dam construction with explanations of process

11) Borrow area maps and photographs

12) Models of construction equipment

13) Photographs of filling of reservoir; full reservoir; flood stage reservoir (1964-65); drought (1975-77)

14) Reservoir data and map

15) Reproduction of Dedication Day program and souvenir issue of Ukiah Daily Journal (Vol VI No. 33 June 4, 1959)

16) Photographs of Corps District Office personnel responsible for Coyote Dam (both planning and construction)

17) Dedication speeches

C. Location of Materials

U.S. Army Corps of Engineers - District and Project Offices
Guy F. Atkinson Company, San Francisco
Ukiah Daily Journal (microfilm - Mendocino County Library)

THEME FOUR - Recreational Development at Lake Mendocino

This theme is optional because visitor information at Lake Mendocino is already available.

A. Objectives

1) to become aware of Corps role in the recreational development of the area

a) research sponsored by Corps
b) improvements

2) to become familiar with the recreational facilities and programs available at Lake Mendocino

B. Suggested Interpretive Materials

1) Illustrated list of Corps sponsored projects at Lake Mendocino

2) Detailed map of recreational facilities

3) Information on programs and events

4) Brochures, interpretive materials, etc.

5) Visitor Information Chart

C. Location of Materials

U.S. Corps of Engineers - Project Office

Materials used to prepare this report were obtained from the Ethnographic Laboratory at Sonoma State Collete, Coyote Dam-Lake Mendocino Project Office, Mendocino County Library and the San Francisco District Office of the U.S. Army Corps of Engineers. (See Ramiller, Neil 1978, Bibliography for locations of specific references.)

Other sources of historic material are The Russian River Flood Control District (North Counties Engineering, Ukiah), Mendocino County Courthouse, Sonoma County Courthouse, Mendocino County Library, Santa Rosa Public Library and the Sonoma County Flood Control and Water Conservation District. The Mendocino County Flood Control and Water Conservation District has no relevant historical materials.

There is a need to locate and interview Corps personnel of the San Francisco District who were instrumental in the planning and design of Coyote Dam in the 1950's. Their informa-

tion is significant for a complete undertaking of the construction history of Coyote Dam.

For examples of the kinds of interpretive materials available, see Historic Interpretive Plates which not only illustrate but are of historic value in themselves.

AD-A124 154 AN INTERPRETIVE HISTORY OF COYOTE DAM MENDOCINO COUNTY CALIFORNIA(U) CORPS OF ENGINEERS SAN FRANCISCO CA SAN FRANCISCO DISTRICT V D KAPLAN FEB 79 DACW07-79-E-0056 2/2

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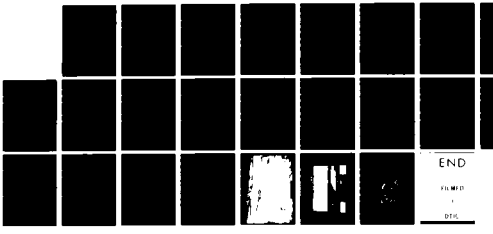

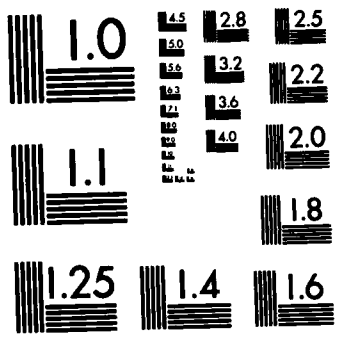

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APPENDIX A

PACIFIC SERVICE MAGAZINE, pp. 342-346, January 1977 issue.
"Our Newly Acquired Properties - Snow Mountain Water and Power Co."
by W. W. Shuban?, Assistant Manager, North Bay Division

The story of this water and power development dates from the beginning of the present century. At that time the city of Ukiah had trouble in supplying satisfactory electric lighting service from its small municipally owned steam plant. In addition to the inefficiency of the plant the current which it did produce was very expensive, costing the consumer $10 per month per horsepower for the light service alone, which never exceeded 16 hours out of the 24. Furthermore, the plant was rapidly deteriorating and the Ukiah Board of Trustees found itself confronted with the problem of raising the necessary funds for renovation and expansion. In its dilemma the board began to look around with the view of securing electric energy from some more adequate and less expensive source.

Water power development was suggested as the most satisfactory solution of the problem. Several schemes were considered. Among these was one located in Walker Valley, where the late Mr. W. W. Van Arsdale of San Francisco owned a ranch of about 15,000 acres. Mr. Van Arsdale became interested and, as a start, employed engineers to investigate a scheme to combine a number of large springs on his property from which a drop of about 1,000 feet could be obtained. After examination, however, his engineers pronounced the quantity of water insufficient to generate the amount of electric energy required by the city of Ukiah. Mr. Van Arsdale next investigated a scheme to utilize the winter flow of Walker Valley Creek, without storage for winter service and using an auxiliary steam plant for the summer months; this, too, was pronounced impracticable by the engineers.

The attention of Mr. Van Arsdale was then called to the possibility of power development on Eel River. The plan suggested was to divert the waters of the south fork of the river at a point about 25 miles northeast of Ukiah and by a tunnel bored through the intervening hillside convey the flow from the dam to a projected powerhouse in Potter Valley where there is a level tract of about 5,000 acres traversed by a branch of the Russian River. This project was approved by the engineers after due examination, the result being that in February, 1905, the Eel River Power and Irrigation Company was incorporated to carry out an agreement with the Ukiah Board of Trustees whereby the new concern undertook to supply electric current for a term of years to an extent of not less than 250 horsepower for the full 24 hours of each day at a rate of $4.00 per horsepower per month.

Mr. Van Arsdale was president of the new company and his San Francisco business partner, Mr. George W. Scott, vice-president. They were the financial factors of the enterprise. Interested with them, but to a lesser extent, were Messrs. E. P. Muir, R. E. Donohue, W. P. Thomas, John Cunningham and P. Connolly, of Mendocino County, and Mr. F. D. Madison of San Francisco, Water rights on Eel River to the extent of more than 75,000 inches were acquired from their various owners, lands

and rights of way secured, and actual construction work was commenced early in the year 1905. Mr. A. M. Hunt, a well-known electrical and mechanical engineer of San Francisco, was employed as consulting engineer to plan and supervise constfuction.

A site for the diversion dam was located at a point known as Cape Horn, where a heavy ledge of hard rock projects from the south side a considerable distance across the stream. The dam as originally planned was to be 80 or 90 feet in height with a view to making a storage reservoir at that point of some five or six billion gallons capacity. In the meantime, however, further investigation of conditions upstream resulted in the location of a site for a much larger and more economical storage reservoir in Gravelly Valley, some 14 miles distant from the other. This discovery caused an alteration of the original plans and the height of Cape Horn dam was reduced to 40 feet above the bed of the reservoir with a view to creating at this point a forebay or balancing reservoir.

The entrance of the tunnel was located about 200 feet upstream from the Cape Horn dam. The length of this tunnel, which would pierce the divide between the Eel River and Russian River watersheds, was figured at 5,800 feet. A powerhouse site, of about 7 acres, was located at the head of Potter Valley.

When the Eel River Power and Irrigation Company was first organized, its capital stock was $500,000, it being thought at that time that this amount would be sufficient to put in the plant as originally contemplated. Later, however, after work was begun and further developments and examinations made it advisable to very much enlarge the original scheme, it was necessary to reorganize the company with a much larger capital. As a result, early in 1906 Senator Charles N. Felton and Mr. E. S. Pillsbury became interested with the original promoters of the scheme, and in February of that year the Snow Mountain Water and Power Company was organized with a capital of $5,000,000. The new concern took over all of the assets and assumed all of the obligations of the Eel River Power and Irrigation Company and proceeded to construct the project on a much larger scale than originally intended.

The properties of the old company were taken over March 1, 1906, and work on power and water projects which had been begun by the latter continued until the middle of April, when, on account of the financial stringency succeeding the catastrophe in San Francisco, all work was suspended. In the fall of 1906 work was resumed and carried to completion without further interruption.

The initial installation at Potter Valley powerhouse consisted of two 2,000 k.v.a. Westinghouse generators. The power project as designed under the new management, exclusive of the Gravelly Valley reservoir, which was not constructed until a much later date, was completed early in 1908 and the first power was transmitted to Ukiah April 1st of that year. In September, 1908, the Snow Mountain Power Company entered into an agreement with the Pacific Gas and Electric Company for an

interchange of power which enabled the Snow Mountain Company to assure uniform service to all wholesale customers. Under this agreement a line was constructed from Ukiah to Wrights Station, near Santa Rosa, and connection established with the "Pacific Service" transmission system. This line was subsequently continued from Wrights Station to the Santa Rosa substation of the Pacific Gas and Electric Company. In 1909 the transmission lines of the company were completed from Fulton to St. Helene and down Napa Valley to Oak Knoll. The Snow Mountain company subsequently delivered electric energy to the California Telephone and Light Company the Mount Konocti Light and Power Company, the Cloverdale Light and Power Company and the Napa Valley Electric Company. The Snow Mountain Company was never in the local distribution business but wholesaled its entire output.

Additions to the generating capacity of Potter Valley power plant were made subsequently. In March, 1910, an Allis-Chalmers 3,000 k.v.a. generator was placed in service and on September 15, 1917, an Allis-Chalmers 2,000 k.v.a. generator was installed, bringing the total plant capacity up to 9,000 k.v.a., or 12,070 horsepower, at which rating it stands today. The average annual output of the plant is about 50,000,000 kilowatthours.

The system receives its entire water supply from South Eel River, which rises on the west slope of the Coast Range, near the northern boundary of Lake county, and flows south and southwest about 15 miles, then westerly about the same distance to the Van Arsdale (Cape Horn) dam site. A considerable area in the southwestern part of the basin above the dam site is drained by Rice Fork of Eel River. The highest part of the whole basin is along its eastern boundary, between South Eel River and Rice Fork, where Snow Mountain reaches an elevation of 7,440 feet and Signal Peak 7,460 feet. General elevations along the eastern and northern boundaries range from 5,500 to 7,000 feet. The elevation at the point of diversion is 1,485 feet above sea level.

The 326.5 square miles of drainage basin above the Cape Horn dam is almost entirely in the California National Forest directly north of Clear Lake and about 110 miles north of San Francisco. The topography of the basin is rugged and well forested, with several level stretches along the stream.

The entrance to the tunnel leading from Van Arsdale reservoir to Potter Valley is 25 feet below normal water level in the reservoir at a point about 200 feet upstream from the dam. The tunnel itself is 5,826 feet long and is lined throughout its entire length. It has a capacity of 350 cubic feet per second. From the outlet portion of the tunnel on the slope above Russian River, pipe lines lead direct to the units in the Potter Valley powerhouse, which is located upon a bench 1 1/5 miles from the channel of the river to which the water from the plant is conveyed through a canal.

The projected Gravelly Valley reservoir was put under construction during the summer of 1920. The site for the dam, called Scott dam after Mr. Van Arsdale's partner, was located at a point at the lower end of the valley where the elevation is 1,790 feet above sea level, 310 feet higher than the elevation at Cape Horn. It was designed as a cyclopean concrete dam, with straight crest and ogee gravity section, 105 feet above the stream bed and 805 feet in length, including a spillway section 485 feet long. The spillway section was constructed 20 feet lower in elevation than the remaining sections of the dam, affording ample capacity for the passage of the maximum flood that could generate in the watershed above it.

Scott dam was completed in December, 1921, The reservoir created by it was filled for the first time in February, 1922. It is called Lake Pillsbury. It has a maximum storage capacity of 93,000 acre-feet and floods 2,003 acres of land, submerging the former town site of Hullville. Lake Pillsbury regulates the run-off from a catchment area of 268 square miles to a minimum flow of approximately 250 second-feet. From Scott dam the water is released as required and flows down the river channel a distance of 8 1/2 miles to Van Arsdale reservoir.

The water thus brought over from the Eel River watershed by the company has not completed its usefulness when it has passed through the power plant. Potter Valley irrigation district, embracing approximately 5,000 acres of the floor of the valley immediately below the power plant has developed a network of canals from which the entire valley can be irrigated by water purchased from the company at the power plant's tailrace. During the past irrigation season, the Potter Valley district had about 4,200 acres under cultivation, the greater part requiring irrigation. Negotiations are now under way looking toward an increase in the delivery to the district, which will need approximately 10,000 acre-feet of water each year to meet its ultimate requirements.

On December 1, 1929, Pacific Gas and Electric Company formally took over the operation of the Snow Mountain Water and Power Company's properties,.....

APPENDIX B

California Water Rights

All rights to water in California are usufructuary, that is, they consist only in rights to the beneficial use of water. The water itself is not susceptible of private ownership so long as it remains in its natural state prior to its being reduced to actual possession. A right to the use of water of a stream includes the right to the continued flow thereof to the owner's point of diversion or to riparian lands, without unlawful interference by others junior in right.

Riparian and appropriative water rights, and correlative rights to the use of ground water, are recognized in California. Of these, riparian and correlative rights are paramount until lost or impaired by grant, condemnation or prescription.

All water rights, both surface and underground, are subject to the doctrine of reasonable use expressed in Section 3 of Article 14 of the California Constitution which limits the right to the quantity of water reasonably required for beneficial use and which prohibits waste, unreasonable use, or unreasonable methods of use or diversion.

Riparian Rights

Riparian rights are part and parcel of riparian lands, i.e., land abutting upon a natural watercourse within the watershed They do not authorize use of water on nonriparian land nor do they permit seasonal storage of water. They are not created by use, nor are they lost by nonuse. They extend to future reasonable requirements for beneficial use upon riparian land, although they do not prevent temporary appropriation by others of water not presently required upon such lands. Each riparian right is correlative with each and every other such right upon the watercourse in the particular watersheds and in the event of insufficient water for all, the available supply must be prorated, except that an upper riparian owner may take the whole supply if necessary for domestic use.

The riparian right attaching to a particular parcel of land is subject to appropriative rights established by diversions upon vacant public domain before the first valid steps were taken to acquire this parcel of land from the United States, whether diversion was made on the parcel or at points upstream or downstream. The riparian rights may be severed and lost in whole or part by grant or condemnation and cannot thereafter be restored. A parcel of land loses its riparian right when separated from contact with the stream by conveyance unless the right is reserved by the grantor. It cannot be transferred for use upon another parcel of land.

Appropriative Rights

The miners of the early gold seeking period established the doctrine of appropriative water rights in California. Their

procedure was based simply on beneficial use and required no recordation in establishing the right. The first procedure requiring recordation in perfecting an appropriative right was the Civil Code enactment of 1872. (California, Civil Code Sections 1410-1422). This procedure, modified several times, was in use until the Water Commission Act (California, Statutes of 1913, Chapter 586) became effective on December 19, 1914.

The oldest of the procedures to perfect an appropriative right required simply that a diversion be made and the water be put to beneficial use. Beneficial use established the date of priority of the right.

The 1872 Civil Code procedure required that before a diversion of surface water could be made, a notice of intention describing the source of the water, the location of the proposed diversion, the amount to be diverted, the use and the place of use be posted at or near the place of proposed diversion. This notice was to be signed, witnessed, and a copy filed with the Recorder in the county in which the proposed diversion was located. The appropriative right thus initiated became perfected when the water was put to beneficial use, but the right related back to the time the notice was posted. While the 1872 Civil Code procedure was the first to require recordation, it was not an exclusive procedure in that an appropriative right could be perfected to the extent of beneficial use simply by diverting the water and making beneficial use of it.

The Water Commission Act, on the other hand, established an exclusive procedure for the appropriation of water. This enactment requires that a permit be obtained from the State of California before water can be appropriated. The procedure outlined by the Water Commission Act, as now codified in the Water Code, requires that an application to appropriate water be submitted to the State Water Rights Board. Upon the approval of the application, a permit is issued so that the applicant can construct the features necessary to put the water to beneficial use. When the project has been completed, an inspection of it is made and a license is issued, to the extent of beneficial use, provided the terms and conditions of the permit have been fulfilled.

Once an appropriative water right has been initiated, it must be diligently prosecuted to completion in order to maintain its date of priority. While water may not be appropriated for a distant future use, a reasonable amount of time is allowed to put the full amount of water to use within the original intent of the application to appropriate water.

A right to appropriate water is lost by abandonment or continuous nonuse. In the case of an appropriation initiated prior to 1914, the period of continuous nonuse is 5 years, while under the Water Commission Act, or the Water Code, the period of continuous nonuse is only 3 years. (Water Code Section 1241)

APPENDIX C.

COPY - Department of Finance Assignment of Water Rights Applications to Sonoma County, State of California Department of Finance, Sacramento, California.

Assignment

WHEREAS, under and by virtue of the provisions of Chapter 286, Statutes of 1927, as amended and as now codified in Part 2, Division 6 of the Water Code of the State of California, the Department of Finance is directed and authorized to make and file applications for any water or the use thereof which in the judgment of the Department of Finance is or may be required in the development and completion of the whole or any part of a general or coordinated plan looking towards the development, utilization or conservation of the water resources of the State of California; and

WHEREAS, the Corps of Engineers, U. S. Army has prepared sucg a general or coordinated plan for the Russian River stream system including as a part thereof the Coyote Valley Project, all as described in House Document 585, 81st Congress, 2nd Session; and

WHEREAS, the Department of Finance on January 38, 1949, filed with the Division of Water Resources the Department of Public Works of the State of California those certain applications for permits to appropriate unappropriated waters of the East Fork of the Russian River in furtherance of the Coyote Valley Project which applications are designated as Applications Nos. 12919 and 12920 upon the records of said Division; and

WHEREAS, Application 12919 is for the appropriation of 550 cubic feet of water per second and 200,000 acre-feet of water per annum for municipal purposes in cities and towns in Sonoma, Marin, and Mendocino Counties, and Application 12920 is for the appropriation of 550 cubic feet of water per second and 200,000 acre-feet of water per annum for domestic and flood control purposes and for irrigation of 44,000 acres of land in Mendocino and Sonoma Counties; and

WHEREAS, Section 10504 of said Water Code authorizes the Department of Finance to assign any portion of any appropriation filed by it under Part 2 of Division 6 of said Water Code when the assignment is for the purpose of development not in conflict with such general or cooridnated plan, and Section 10505 of siad Water Code prohibits any such assignment that will in the judgment of the Department of Finance deprive the county in which the appropriated water originates of any such water necessary for the development of the county; and

WHEREAS, the Congress of the United States has authorized the Coyote Valley Project, including construction of Coyote Dam and Reservoir to an initial capacity of 122,500 acre-feet, and has appropriated funds for commencement of construction thereof; and

WHEREAS, the Congress has provided that prior to starting construction, local interests shall contribute the sum of $5,598,000 in cash in full payment of the conservation benefits; and

WHEREAS, the California Legislature has adopted and authorized the Coyote Valley Project, and has required the Sonoma County Flood Control and Water Conservation District to give assurances satisfactory to the Secretary of the Army that local cooperation as required by the Congress will be furnished by said district, and to execute, in conjunction with the Department of the Army, the authorized plans and projects, and to exercise all powers granted to said district in the Sonoma County Flood Control and Water Conservation District Act, and to make such modifications and amendments to the plans as may be necessary to execute them; and

WHEREAS, propositions to authorize the Sonoma County Flood Control and Water Conservation District to incur a bonded indebtedness in the principal amount of $5,650,000 for the purpose of paying the contribution required by Congress to be paid by local interests for said project, and $8,500,000 to pay for diversion structures, pipe lines and other works to utilize the water to be made available by the project, were duly adopted by the qualified electors of the aforesaid district; and

WHEREAS, The Board of Directors of the Sonoma County Flood Control and Water Conservation District, by resolution duly and regularly adopted, has given to the Department of the Army on behalf of said district assurances of local cooperation in said project by said district, including a contribution of $5,598,000 in cash, in whole or in part as required, for the cost of project construction; and

WHEREAS, the Corps of Engineers' report included in House Document 585, hereinbefore referred to, contemplates the maintenance of a minimum flow of 200 cfs at Guerneville in order to meet recreational requirements; and

WHEREAS, said Report contemplates the serving of irrigation water to Mendocino County to irrigate an additional area of 4,096 acres and to Sonoma County to irrigate an additional area of 8,259 acres under the initial stage of the Coyote Valley Project, which with the estimated average annual irrigation yield of the initial stage of the Coyote Valley Project of 24,000 acre-feet would make approximately 8,000 acre-feet per annum available to Mendocino County and approximately 16,000 acre-feet per annum available to Sonoma County; and

WHEREAS, according to said Corps of Engineers' report, the ultimate increase in acres in Medocino County which would be served by both the initial and final stage of Coyote Valley Project will be 4,096 acres as hereinbefore recited; and

WHEREAS, said Report contemplates the serving of irrigation water to Mendocino County to irrigate an additional area of 4.096 acres and to Sonoma County to irrigate an additional area of 8,259 acres under the initial stage of the Coyote Valley Project, which with estimated average annual irrigation yield of the initial stage of the Coyote Valley Project of 24,000 acre-feet would make approximately 8,000 acre-feet per annum available to Mendocino County and approximately 16,000 acre-feet per annum abailable to Sonoma County; and

WHEREAS, according to said Corps of Engineers' report, the ultimate increase in acres in Mendocino County which would be served by both the initial and final stage of Coyote Valley Project will be 4,096 acres as hereinbefore recited; and

WHEREAS, according to the said Corps of Engineers' report the ultimate increase in acres in Sonoma County to be served by the initial stage of Coyote Valley Project will be 8,259 acres and by the final Coyote Valley Project plus the Dry Creek Project will be 30,987 acres; and

WHEREAS, the latest studies of the Corps of Engineers state that only 125 cubic feet per second at Guerneville and 150 cubic feet per second at the Forks is required to meet recreational and certain other requirements thereby increasing the average irrigation yield from releases from storage of the Coyote Valley Project initial stage from 24,000 acre-feet per annum as set forth in said Report to 45,500 acre-feet per annum; and

WHEREAS, the amounts of 8,000 acre-feet per annum and 16,000 acre-feet per annum are ample to supply the water requirements of the 4,096 acres in Mendocino County and 8,259 acres in Sonoma County referred to in said Corps of Engineers' report, and the increased amount of water yield from the project due to any reduction in the recreation flow can only be available for beneficial use on other lands; and

WHEREAS, any increase in yield in the Coyote Valley Project over and above that envisioned in the original Corps of Engineers' report will be available to serve additional land in Sonoma County and for export to Marin County; and

WHEREAS, the Coyote Valley Project will benefit both Mendocino County and Sonoma County through reduction in flood hazard and stabilization stream flow for recreational purposes; and

WHEREAS, a critical water shortage exists in the Russian River Valley which will be materially alleviated by construction and operation of the Coyote Valley Project; and

WHEREAS, there exists in Mendocino County additional unappropriated water which can be developed by that County as necessary to meet other needs of that County; and

WHEREAS, the Sonoma County Flood Control and Water Conservation District has requested the Department of Finance to immediately assign to it Applications 12919 and 12920 subject to the condition that in the event a district organization in Mendocino County elects to participate in the project a portion which request was made in order that the Sonoma County Flood Control and Water Conservation District may sell its bonds and turn the required amount of money over to the Federal Goverment so that construction of the project can start as soon as possible; and

WHEREAS, the consulting engineer for Mendocino County has estimated that said County will receive benefits from the Project to the extent of $633,000 and has recommended that the County participate financially in the Project to that extent; and

WHEREAS, Mendocino County has not as yet determined the extent of its financial participation, if any, in the aforesaid project, but it appears, on the basis of information now available, that Mendocino County may participate financially in the project to the extent of $633,000 as the contribution by local interests to supply adequate water to the area in Mendocino County to be served by the Coyote Valley Project.

NOW, THEREFORE, in pursuance of the discretion and judgment vested in it by the aforesaid provisions of the Water Code, the Department of Finance, being fully advised in the premises, does hereby find and determine;

a) The Coyote Valley Project as presently authorized, in view of the amount of water to made available for beneficial use thereby, does not require assignment of the whole of said Applications 12919 and 12920;

b) The partial assignment to the Sonoma County Flood Control and Water Conservation District in the form and substance hereinafter made of the aforesaid Applications 12919 and 12920, and of such rights and interests in and to the waters of the East Fork Russian River as were acquired thereby and initiated thereunder, is for a purpose of development not in conflict with a general or coordinated plan looking towards the development, utilization or conservation of the water resources of the State of California, but is in furtherance thereof; and

c) Said partial assignment in the form and substance hereinafter made of the aforesaid applications and rights thereunder will not, in the judgment of the Department of Finance, deprive any county which such appropriated water originates of any such water necessary for the development of such county.

The Department of Finance in consideration of the foregoing and of the general benefits to accrue to the State of California from the construction of Coyote Valley Project, DOES HEREBY TRANSFER, ASSIGN AND SET OVER to the Sonoma County Flood Control and Water Conservation District for the use and benefit of said Coyote Valley Project, that portion of the aforesaid Applications 12919 and 12920 and of such rights, and interests in and to the waters of the East Fork Russian River as were acquired thereby and initiated thereunder to the extent of 335 cubic feet of water per second by direct diversion and 122,500 acre-feet of water per annum for storage under both applications, reserving to itself the remainder of said applications, and each of them;

SUBJECT, in conformity with Section 10505 of the Water Code of the State of California, to any and all rights of any county in which the water sought to be appropriated originates to the extent that any such water may be necessary for the development of lands in such county lying in the watershed above Coyote Valley Reservoir;

FURTHER SUBJECT TO, and upon condition that, upon payment by such appropriate district in Mendocino County as may be hereafter orgainized for the purpose, to Sonoma County Flood Control and Water Conservation District of 1) a share of the local contribution to the cost of said project not to exceed $633,000, and 2) an appropriate share of the financing costs incurred by the Sonoma County Flood Control and Water Conservation District, said Mendocino County District shall be entitled to an amount of project water reasonably required for beneficial use on not to exceed 4,096 acres or such portion thereof as the amount paid under item 1) above bears to said sum of $633,000, and that upon such payment Sonoma County Flood Control and Water Conservation District shall reassign to said Mendocino County District an interest in the aforesaid Applications 12919 and 12920 and in such permits and licenses as may be hereafter issued thereon, which interests shall be representative of the aforesaid entitlement of said Mendocino County District to the use of project water; provided that said Mendocino County District be required to financially participate on or before 1990 or before the commencement of construction of the second stage of the Coyote Valley Project, whichever is earlier, and provided further that in the event of financial participation by Mendocino County District and reassignment to said District as above provided, the use of water covered by all that portion of the applications the subject of the assignment, outside the boudaries of the two counties, shall be permitted only ypon the approval of both districts.

FURTHER SUBJECT TO, and upon condition, in the event of failure of the Sonoma County Flood Control and Water Conservation District to exercise due diligence in the completion of the appropriations of water initiated by the aforesaid Applications 12919 and 12920 to the extent they are hereby assigned, this assignment shall be of no force and effect and the interest in said applications transferred hereby and any and all right to water or the use of water acquired thereunder, shall revert to the Department of Finance which department shall thereupon forwith become reinstated in and to said applications and any and all rights hereby conferred upon said district as if this assignment had not been executed; and in like manner and with like effect, in the event of reassignment of an interest in the aforesaid applications to a district hereafter organized in Mendocino County as hereinbefore provided, and subsequent failure of such district to exercise due diligence in the completion of its appropriation of water thereunder, the interest of such district in the aforesaid applications and in appropriations of water thereunder shall revert to the Department of Finance.

IN WITNESS WHEREOF, the Department of Finance of the State of California, acting by and through the Director of Finance, has caused this assignment to be executed this 14 day of November, A.D., Nineteen Hundred and Fifty-five.

DEPARTMENT OF FINANCE OF THE
STATE OF CALIFORNIA

COPY of Sonoma County Reassignment of Water Rights Application to Mendocino County.

REASSIGNMENT OF WATER RIGHTS

WHEREAS, under date of November 14, 1955, the Department of Finance of the State of California made a partieal assignment to the Sonoma County Flood Control and Water Conservation District of Department of Finance Applications 12919, and 12920 and of such rights and interests in and to the waters of the East Fork Russian River as were acquired thereby and initiated thereunder which applications were filed with the Division of Water Resources of the Department of Public Works of the State of California pursuant to the provisions of Chapter 286, Statutes of 1927 as amended and now codified in Part 2, Division 6 of the Water Code of the State of California; and

WHEREAS, said assignment provides that: "upon payment by such appropriate district in Mendocino County as may be hereafter organized for the purpose, to Sonoma County Flood Control and Water Conservation District of (1) a share of the local contribution to the cost of said project not to exceed a maximum of $633,000, and (2) a proportionate share of the interest costs incurred by the Sonoma County Flood Control and Water Conservation District, said Mendocino County District shall be entitled" thereto; and

WHEREAS, Mendocino County Russian River Flood Control and Water Conservation Improvement District organized for the purpose of and as such an appropriate District in Mendocino County has tendered payment therefor to the Sonoma County Flood Control and Water Conservation District of a sum of moneys as required by said document of assignment by the Department of Finance, State of California, dated November 14, 1955, to wit:

1) A share of the local contribution of the cost of said Coyote Valley Project in the amount of Six Hundred Thirty-Three Thousand Dollars ($633,000.00), plus

2) A proportionate share of the interest cost incurred by the Sonoma County Flood Control and Water Conservation District to wit: Thirteen Thousand One Hundred Five and 91/100ths Dollars ($13,105.91) making a total payment of Six Hundred Forty Six Thousand One Hundred Five and 91/100ths Dollars, ($640,105.91);

NOW, THEREFORE, for and in consideration of payment of said sum of Six Hundred Forty Six Thousand One Hundred Five and 91/100ths Dollars ($646,105.91) to the Sonoma County Flood Control and Water Conservation District, said District DOES HEREBY TRANSFER, ASSIGN AND SET OVER to the Mendocino County Russian River Flood Control and Water Conservation Improvement District for the use and benefit of said Coyote Valley Project, without warranty, that portion of the aforesaid assignment of Water Rights to the Sonoma County Flood Control and Water Conservation District by the Department of Finance; State of California, dated November 14, 1955, to which said payment entitled said Mendocino County District under the terms and conditions of said assignment dated November 14, 1955, consisting of a proportionate interest as herein

provided in the Aforesaid partial assignment of Applications 12919 and 12920 and in such permits and licenses as may be hereafter issued thereon which interest shall be representative of the aforesaid entitlement of said Mendocino County District to use of project water.

Nothing herein contained, or in Coyote Valley Project proceedings heretofore had shall be construed as an assumption of duty on the part of the Sonoma County Flood Control and Water Conservation District to exercise due diligence in the completion of the appropriations of water initiated by the aforesaid Applications 12919 and 12920 to the extent they are hereby reassigned, or to otherwise perfect, protect or assert the rights, powers, privileges or immunities of Menodcino County or the Mendocino County Russuan River Flood Control and Water Conservation Improvement District.

IN WITNESS WHEREOF, the Sonoma County Flood Control and Water Conservation District, acting by and through the Board of Directors of said District has caused this instrument to be executed this 20th day of December, 1956.

SONOMA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

By VICTOR H. ANDERSON
Chairman, Board of Directors
As authorized by Resolution No. SA 10737 of the Board of Directors of the Sonoma County Flood Control and Water Conservation District.

ATTEST:

D. Larson
Deputy Clerk

APPENDIX D

From the office of
Congressman Clem Miller
First District, California
135 House Office Building
Washington, D. C.

SPEECH OF CONGRESSMAN CLEM MILLER AT COYOTE DAM DEDICATION
Ukiah, California, June 6, 1959

This is a tremendous structure. Everyone knows its vital statistics -- 6 million cubic yards of earth and rock. 53,000 tons of concrete. 160 feet high. 3500 feet long. But it is not simply X-number of dollars and Y-number of hours and Z-amounts of materials. It is much more. It is a monument to many people.

It is, in its very name, a tribute to our very beginnings. Mendocino, Cape Mendocino, earliest such name to come down to us in California -- named for Senor Antonio de Mendoza, viceroy of Mexico, and patron of Juan Cabrillo, the explorer of our coastline in 1542.

It is tribute to our early settlers in this very valley -- to Thomas and William Potter and Michael Briggs in 1852, antedating the founding of Ukiah by four years.

This dam is a monument to that age of exploration and expansion brought down to the present day. Of vigorous people, of industrial progress, a bounding population and a bright future.

The promise of this whole valley, this entire watershed, requires public works of this sort to give fulfillment, shape and meaning to the individual efforts of its citizens and their forebears.

The people of Mendocino and Sonoma Counties work hard and long to bring prosperity to themselves. With hard work they build up farms and ranches, create businesses and jobs. In return, they have a right to expect that their government will shield them from the public dangers of flood damage and erosion, of stream pollution, of water shortages. They expect, and may properly demand, that their government, county, state, and federal, supply these public services in order that they can continue to prosper in their private pursuits. That the river shall not cannibalize their ranch lands. That it shall not inundate their businesses. That their fishing rights shall be unimpaired. That they shall have healthful water to drink.

It is one of the more unfortunate aspects of modern understanding that this great need for public construction has been subjected to a veritable mountain of objection. We have been told that this is "pork barrel", that we do not have the money -- that it is inflationary, that we can't do this, can't do that, can't do the other, when, in actual point of fact, it is more inflationary, and fiscally irresponsible not to build these needed public works. Without them, we must limp along with floods, with impure water, with polluted fishing streams, and all the other costs which we would have to bear, money costs as many people in this audience can attest to personally.

MORE

NSCRS-25

Inflation is the rise in costs due to shortages. Without Coyote Dam we have to do with less, less water, less protection, and this puts a limit on our growth just as surely as if a great hand lowered itself on our valley to suffocate us. Hence, Coyote Dam is an investment, an investment of $20,000,000 in this countryside, a firm plank upon which a vigorous, thriving private economy can be built. I am quite sure if this were understood by those who presently complain, it would end once and for all the derisive talk about "pork barrel" and inflation. (Don't misunderstand me, inflation is a threat, but not from our public civil works.)

Coyote Dam stands here as the refutation of this theory that we cannot build, we cannot do -- in this country.

It stands as tribute to the very concept of flood control and water conservation. It is in direct lineal descent from our early efforts to control the ravages of floods in the 1870's. With the setting up of the Mississippi River Commission in 1917, it was only natural that this development should lodge in the Corps of Engineers. To the present time this investment for our protection amounts to a sum of over five and a half billion dollars.

Thus, we in America have unleashed the strength of our government to harness our water resources for our own protection. But the influence is much broader. The effect has been world-wide. Our trained engineers are showing other nations of the world how to create a great capital resource for the benefit of all.

Coyote Dam is a direct tribute to those individuals who perceived that this site in this valley would implement our national water policies.

Congressman Lea, this district's representative for 32 years, began the work in 1939 with an authorization. Then Congressman Scudder took up the work in securing planning funds, and the expenditure of $11,552,000 was authorized by President Truman in 1950. These dry events scarcely acknowledge the patient work of weeks, months and years put in by the many, many people to make this dam possible.

It is a tribute to the energies and vision of the Corps of Engineers, Colonels Tandy, Moore, Walsh, Walker, Goodpasture, Graf and presently Col. Harnett. It was the Corps' responsibility to decide on this site. Theirs was the heavy responsibility of choice It is easy to say that this dam could have been built elsewhere. I am aware of the great debates that have raged over this project, and there is much merit to what has been said in criticism. There has been an honest difference of opinion.

It was the Corps which had to weigh the tangibles and intangibles -- to make the choice. Everyone realizes that Coyote Dam is but one piece in the puzzle. That other structures are needed to complete the protection of this great drainage basin. As far back as the authorizing report of 1939, it was known that we must control the tributaries of the

Russian River if we would control the flooding. Russian River, Mark West Creek, Sulphur Creek, Dry Creek and so on, are subject to sudden and violent deluge. The peculiarities here present great engineering and site difficulties. The best solution would have been to construct all the works at once, but this is simply a political impossibility. They had to be approached one by one. Successively, they will be conquered. When completed, they will reduce peak flood flows to manageable proportions. A beginning had to be made somewhere, and Coyote was the logical place to begin.

Now, I have some good news. You will be delighted to know that we are now embarked on the second stage of this flood control project. Yesterday, the House approved $50,000 to survey Dry Creek. This is a victory of the greatest magnitude, because there is a current policy against any new starts. (It is unfortunate that floods, pollution and erosion do not halt upon the promulgation of policies.) So we are grateful, and we can be thankful that our very real needs were considered. While we here rejoice at the opening of Coyote Dam, this pleasure is considerably augmented b the onset of the second stage of development at Dry Creek.

The construction of Coyote we have come to expect as a commonplace of American genius. We are wrong in taking these great structures so for granted. Each one is unique, and Coyote is no exception. It is a tribute to the project engineer, Mr. CHARLES BEATY, devising means to overcome the inevitable roadblocks to completion. To the equipment operators who handle the earth-moving machines with a finesse and skill that is almost uncanny. One could not help getting a tremendous sense of pride standing near this site while construction was under way to see these marvels taking shape. I can tell you I felt intensely proud. Proud of these men, proud of my government, and of my country.

The dam is finally, a tribute to the organizing genius of our governments. Easy as it may sound, it is not a simple matter to cooperate between levels of government, even with every good will in the world. Local interests are frequently hurt by the broader objectives of regional and national policy. Individual rights are at stake. The Board of Supervisors and officials of Mendocino County, and of Sonoma, patiently working at these difficult problems, have been able to come to that moment where a start was possible and where a successful conclusion has been reached. This was a real partnership where the counties have contributed their share in planning, in organizing and in financing. And the federal officials were able to discover the formula whereby the resources of all of us could be committed to this joint effort. We realize there have been problems unresolved, and injustices still to be righted,(I hear about these in Washington; and we are doing something about them), but in the main, this was a tremendous outpouring of cooperative effort that was crowned with the success of construction.

This is the past. Now, it is a project for use, and for the future. We will see the beneficial effects of our national water policy diffused through the entire region. Water for Santa Rosa, for Petaluma, for Sonoma, for Novato and north Marin. Water, without which we cannot build, cannot provide for our people and its population. Water, spreading its beneficial, unifying effects through the Redwood Empire to make it more prosperous.

Moreover, with this distribution system, we can look into the future. To our north lies the Eel River complex with its millions of acre feet and billions of gallons of water, much of which will be available for export. This exciting vista of linking our northern counties with central and southern California is already gaining the attention of our engineers and planners. Further north, 9 million acre feet of the Klamath River presently waste into the sea. If study proves feasible, the Russian River would provide a ready means of receiving this precious resource, storing it, and distributing it through the Redwood Empire and to the south. It is an exciting and thrilling prospect.

There will be benefits that we will come to accept without thinking much about. Rampaging rivers, once put under control, will soon be forgotten. Water flowing from a tap seems second nature in America. The fact that Coyote made it possible for many of us, will also be forgotten. What will be immediate and visible for all of us down through time will be Lake Mendocino taking shape before us. And Lake Mendocino will spell Recreation.

Our population has exploded in the past few years. According to the demographers we haven't seen anything yet. 50 million more Americans in less than ten years. Twenty million people living in California.

Spectacular as our increase in population may be, it is not half as impressive as the leap in recreation. The figures are almost beyond belief. In our National Forests there were 19 million visitors in 1946. Last year they were almost 66 million. An overload of facilities of 40%. (I don't need to remind residents here in Mendocino of this fact as we see what is happening in Mendocino National Forest. $5,000 will be spent this year where we could profitably and wisely spend $100,000.)

The same story is repeated in our national parks. In 1946 there were 24 million visits, and last year there were almost 60 million visitors, taxing facilities to the breaking point in spite of Mission 66.

The rise in visitors at Corps of Engineer reservoirs has exhibited the most staggering increase of all. In 1950 there were 16 million visitors, and in 1958 there were 85 million. In less than 10 years it will be 180 million visitors. Most of these visits will be to the 3 million acres of water in the reservoirs it has constructed.

Note well, how much more rapidly recreation has been expanding than has population, even though the latter was spectacular. It would make an interesting study to ascertain why this has come about. It is undoubtedly due to our increasing family population, rising a third in half a century, to our increasing per capita income, our increasing mobility as a nation, and to our increasing leisure.

It is also due to an increasing need for outdoor recreation in and of itself -- and for itself. As our population increase since the war has been of the urban variety, there is a greater need to get away from the endless noise and clash and frustration of city life. This need to get away, to find peace and quiet will mount higher and higher; it will not decrease.

Thus, the attitude of those of us in government must change and give way. We must abandon the concept of recreation as a frill. Till now, there has been no national recreatic policy, and only limited recognition of its need. This must give way. It must be considerec as an integral part of any project development because of its essentiality in and for itself.

The Corps of Engineers knows this to be a fact. Their witness, General MacDonnell has testified to this in the House of Representatives. He reports that the Corps has only been able to invest $10,800,000 on the 138 existing projects for minimum recreation facilities. This figures out to 12 cents per visitor day. It desperately needs $9½ million right now for the most urgent work on our present projects. This would amount to only 24 cents per visitor day. It is hard to believe that this would not be worth every penny for the sheer pleasure it would give alone. Remember, these 3 million acres of reservoir now have 80 million visitors a year, and will have 180 million in less than ten years.

However, this is not the only consideration. From figures already stale in 1956, we learn that recreation is a $20 billion business. Of this amount Americans spent 4 to 5 billion on outdoor recreation. Thus, there is a solid economic rationale upon which to base the recreation development of Corps reservoirs, now to include our own Lake Mendocinc

And recreation spending is bounding up at a rate of 8-10% per year. With this increase goes a steadily mounting strain on our resources. They are worn out with intensive over-use. Campsites, landing ramps, are destroyed. Soil is compacted. Trees are uprooted.

In the face of these staggering facts, what we are doing, what we are planning to do, is a pitiful story. Operation Outdoors of the Forest Service, for example, is 60% behind in execution of its plans; and is 50% behind in concept. The plan called for 40,000 new camping units by 1962. We now need 20,000 more than that figure, but have only built 6,000. It is the same story for Mission 66, the program of the National Park Service.

It is 30% behind in its estimate of what the need would be, and 50% behind in its achievement of the goals it set for itself. We have already set out the sorry details in projects of the Corps of Engineers. For years, the Corps has struggled along with no consideration from Congress for the recreation needs at reservoirs. Last year, <u>for the first time</u>, Congress acknowledged, with a line item of $275,000, a sum to be ear-marked for recreation planning.

This is the record of the past. What of the future? According to the experts we must acquire forty times what we presently have in recreation areas to keep up with population, leisure time and increased incomes. Yet, there are no present plans for acquisition at all. In repair and new construction we are falling steadily behind. According to the Sports Fishing Institute we are accomplishing only 1% of what we could accomplish, federal, state and local. This is our prospect.

People say -- why should we spend to supply recreation? Well, those people should be advised that recreationists pay their own way in our civil works program. A recent report indicates that government may realize as much from recreationists as it received for the power the dam may generate, and for which the project was originally built. Other people say that we should let local government do the job. I say local government is doing its share. You would be interested in knowing that local government spends a $1.36 for these projects for every 10 cents spent by the federal government.

Mendocino County is now bending to the job of Lake Mendocino. It is working out a recreation plan. It is committing its resources. The Board of Supervisors, the Chamber of Commerce, the civic-minded people, and the businesses of the area, are seeking ways to make Lake Mendocino a recreation attraction of the first rank.

It is my view that we need more. In my mind the federal government, which had the biggest stake in putting this Lake here, has the obligation to see that its recreation potential will be fully developed. In cooperation with the County of Mendocino, yes. But with the final responsibility itself. And to date, the federal government has shirked its responsibility. It has thrown the load on local government. It has no recreation policy. It has no coordination of goals. It has not begun to even grapple with the proble

This means new horizons in Congress. It means a recognition that recreation is a necessity, that it has value in and for itself. It demands recognition that recreation is an asset, exactly like money in the bank, an investment in health and well-being, as well as an economic asset, an investment in the area; that it is not just a federal cost. It demands recognition that recreation is a business with economic significance in exactly the same sense as steel or bricks or autos.

When we tell the Engineers to develop a damsite, they must be instructed to consider the land needed for recreation in their plans. We have been building our reservoirs with no attention to the modest recreation needs, and so we have made reservoir planning almost impossible in many cases. They must receive the necessary funds to plan, to construct, and, if necessary to operate the project until local government can take it over. Sufficient funds must be provided to maintain the area in reasonably good condition. No matter how incomparable the site, an area gutted by lack of care and over-use is a liability, not an asset, a social cost that we pay and pay for many times over.

These are problems to which federal policymakers must address themselves. This is the high task of the National Recreation Resources Review Commission, now at work. We wish them well, and may the Commissioners bring some sense of urgency to their work.

Coyote Dam stands as the monument to many, many devoted people, a great number of them here today. Lake Mendocino stands as the great challenge of the future. I know that the people of Mendocino, of Sonoma, their elected and appointed representatives, and of the nation, are going to meet it.

# # #

APPENDIX E

SCHEDULE "A"
SCOPE OF SERVICES
HISTORY OF THE COYOTE DAM - LAKE MENDOCINO PROJECT

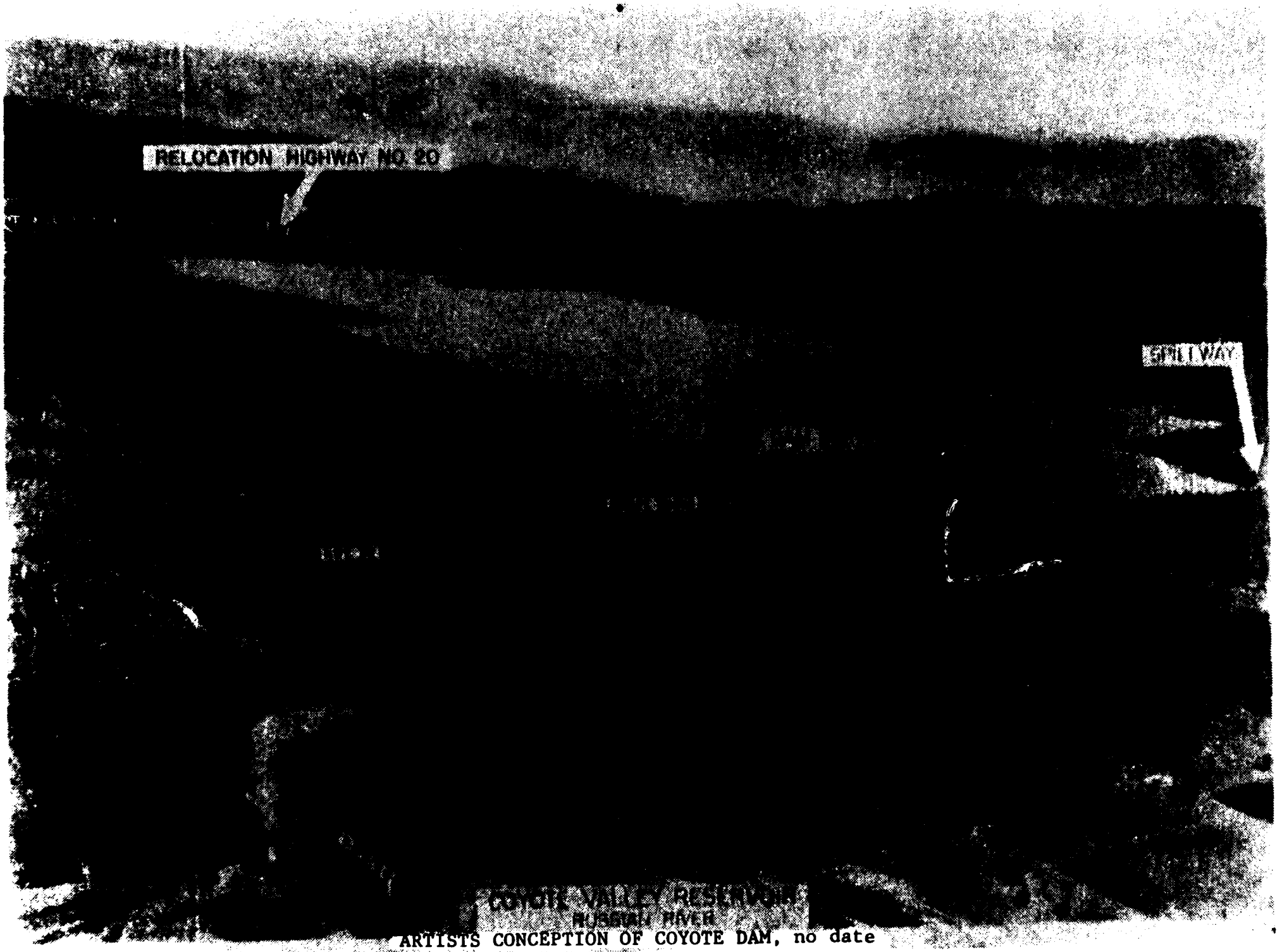
The Contractor shall prepare a report on the history of the Coyote Dam - Lake Mendocino project of the U.S. Army Corps of Engineers and its relationship to the Russian River water system. The report will be used for the planning of interpretive activities at the Lake Mendocino Interpretive-Cultural Center and related interpretive programs at the project. The data shall include historical information pertaining to why and how the project was needed and constructed, changes which have taken place since construction, and the facilities and operations currently available.

Written and oral sources of relevant data shall be gathered in Sonoma and Mendocino Counties, and elsewhere as necessary. Public files of the Corps of Engineers shall be examined, and interviews conducted with those who have played major roles in the project's formulation, construction and operation. Materials suitable for use in exhibit and other interpretive programs shall be identified, and recommendations made for acquisition of such materials.

A typed, double spaced draft of the report shall be submitted, with ten bound copies within 45 days from receipt of notice to proceed. The Government will return comments to the Contractor within 65 days. The Contractor will address the Government's comments, revising the report where acceptable, or indicating in a separate statement why the changes should not be made. The final report, with all accompanying documentation, shall be submitted, typed, double spaced with ten, bound copies within 85 days from receipt of notice to proceed.

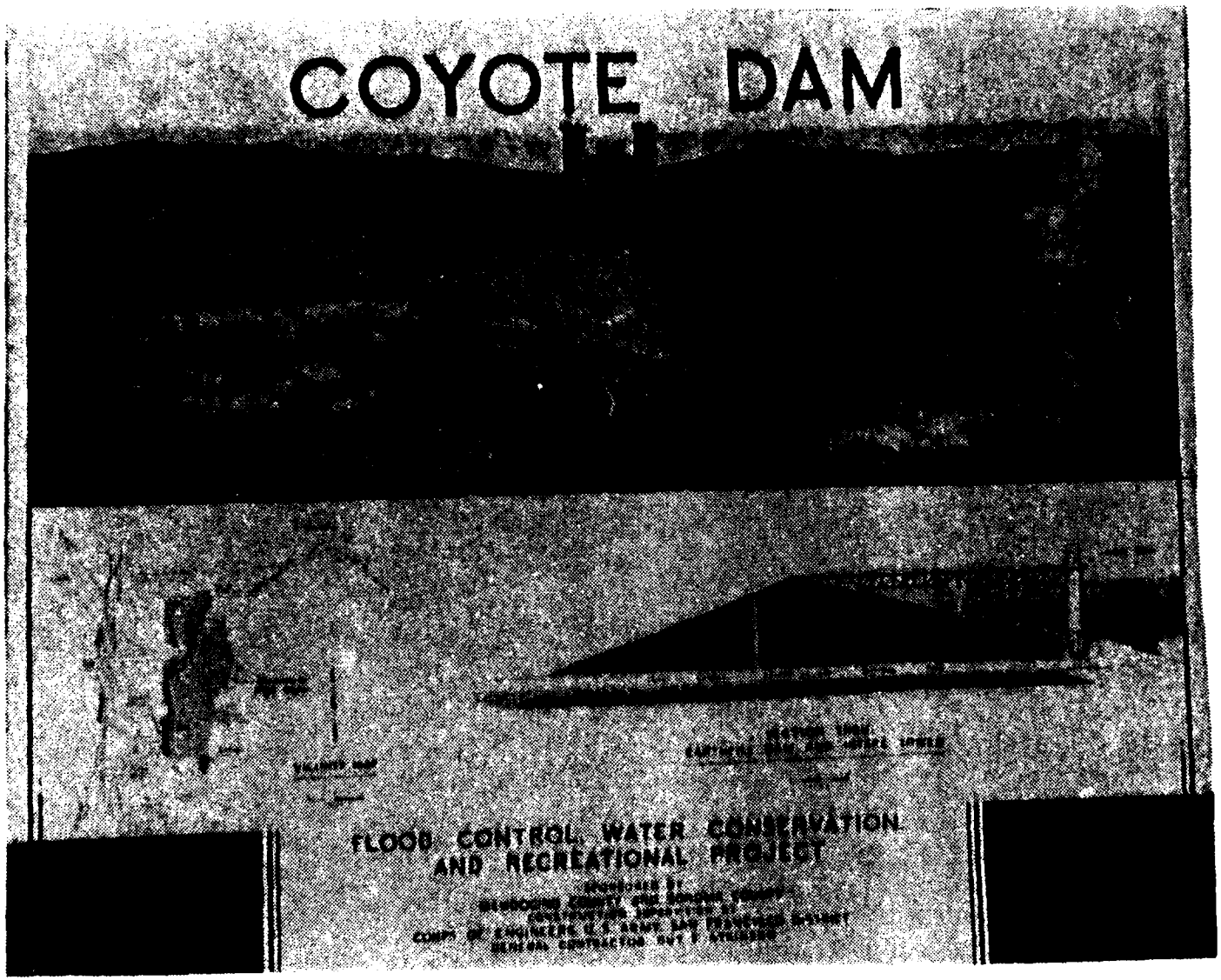
HISTORIC INTERPRETIVE PLATES

(examples of type of material available
at Project and District Office)



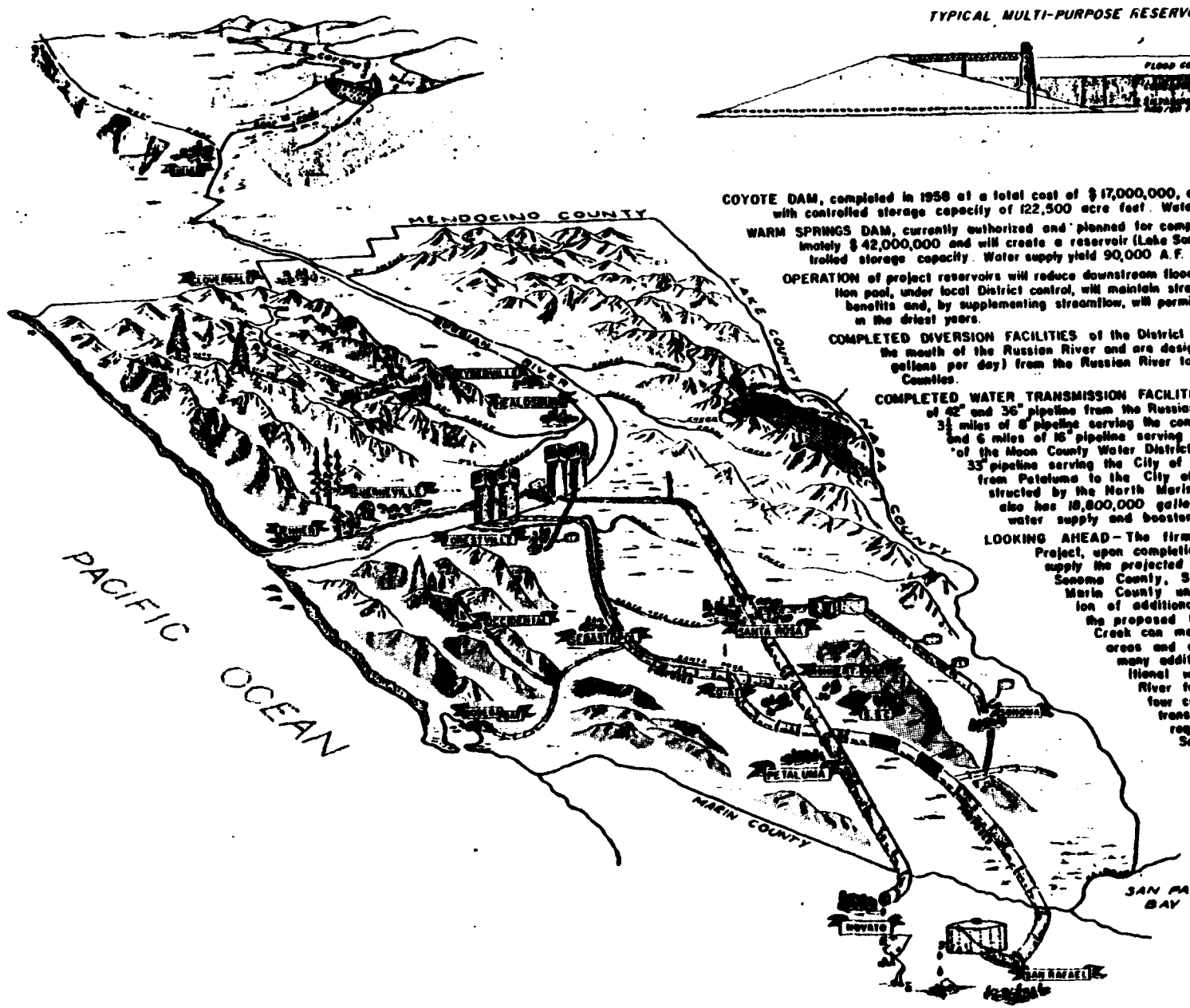
ARTISTS CONCEPTION OF COYOTE DAM, no date

PLATE 20



ROAD SIGN AT COYOTE DAM, no date

PLATE 21



TYPICAL MULTI-PURPOSE RESERVOIR

	COYOTE VALLEY	WARM SPRINGS
	40,000 A.F.	120,000 A.F.
	70,000 A.F.	157,000 A.F.
	9,000 A.F.	20,000 A.F.

COYOTE DAM, completed in 1958 at a total cost of $17,000,000, creates a reservoir (Lake Mendocino) with controlled storage capacity of 122,500 acre feet. Water supply yield 60,000 A.F. per year.

WARM SPRINGS DAM, currently authorized and planned for completion about 1968, will cost approximately $42,000,000 and will create a reservoir (Lake Sonoma) with 277,000 acre feet of controlled storage capacity. Water supply yield 90,000 A.F. per year.

OPERATION of project reservoirs will reduce downstream flood crests. Releases from the conservation pool, under local District control, will maintain streamflow for recreation and fishlife benefits and, by supplementing streamflow, will permit diversion of the calculated yields in the driest years.

COMPLETED DIVERSION FACILITIES of the District are located 23 miles upstream from the mouth of the Russian River and are designed to pump 62 cfs (40,000,000 gallons per day) from the Russian River to areas of use in Sonoma and Marin Counties.

COMPLETED WATER TRANSMISSION FACILITIES of the District include 15½ miles of 42" and 36" pipeline from the Russian River to the city of Santa Rosa, 3½ miles of 8" pipeline serving the community of Forestville, 11 miles of 20" and 6 miles of 16" pipeline serving the City of Sonoma and the Valley of the Moon County Water District, and 7½ miles of 24" and 8½ miles of 33" pipeline serving the City of Petaluma. 11 miles of 30" pipeline from Petaluma to the City of Novato in Marin County was constructed by the North Marin County Water District. The system also has 18,800,000 gallons of covered storage for treated water supply and booster pumping stations.

LOOKING AHEAD – The firm yield of the Russian River Project, upon completion of the Warm Springs Dam, will supply the projected supplemental water requirements of Sonoma County, Southern Mendocino County and Marin County until approximately 1995. Construction of additional conservation reservoirs such as the proposed Knights Valley Reservoir on Maacama Creek can meet the water requirements of these areas and certain areas in Napa County for many additional years and, if necessary, additional water can be imported from the Eel River to meet ultimate water needs of the four county area. Existing diversion and transmission facilities can deliver the water requirements of project customers in Sonoma County until 1980 and in North Marin County area until approximately 1970. Additional transmission facilities are being studied which could deliver water to Sonoma and Marin Counties beyond these dates until about 1995.

RUSSIAN RIVER PROJECT SONOMA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, no date
PLATE 22